

# LYONS COMMUNICATIONS CENTER



Lyons Communications Center | AUTOVON | Lyons AT\_T 1975



# American Telephone and Telegraph Company

Long Lines Department

LYONS, NEBRASKA

The Lyons underground Communications Center is an important junction point on the transcontinental L-4 cable route.

The L-4 coaxial cable has a capacity of 32,400 telephone circuits. By contrast, the original transcontinental line which crossed Nebraska in 1915, could handle three calls—assuming everything was in order.

The L-4 cable is interconnected to the south with a 12-tube coaxial cable to North Bend and to the North by microwave radio to the Omaha-Fargo radio relay route.

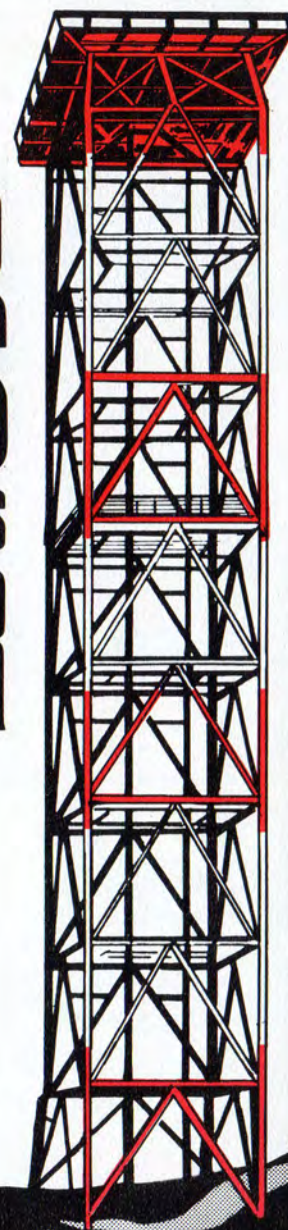
The importance of maintaining communications in event of natural or nuclear disaster is reflected by the Lyons structure. The building can withstand an overpressure of up to 50 Pounds per Square Inch. By contrast the average home will collapse with an overpressure of less than ½ PSI.

Lyons is staffed 24 hours each day of the year to insure reliable, quality service.

"No job is so important  
and no service is so  
urgent that we cannot  
take time to perform  
our work safely"



# WELCOME TO LYONS COMMUNICATIONS CENTER



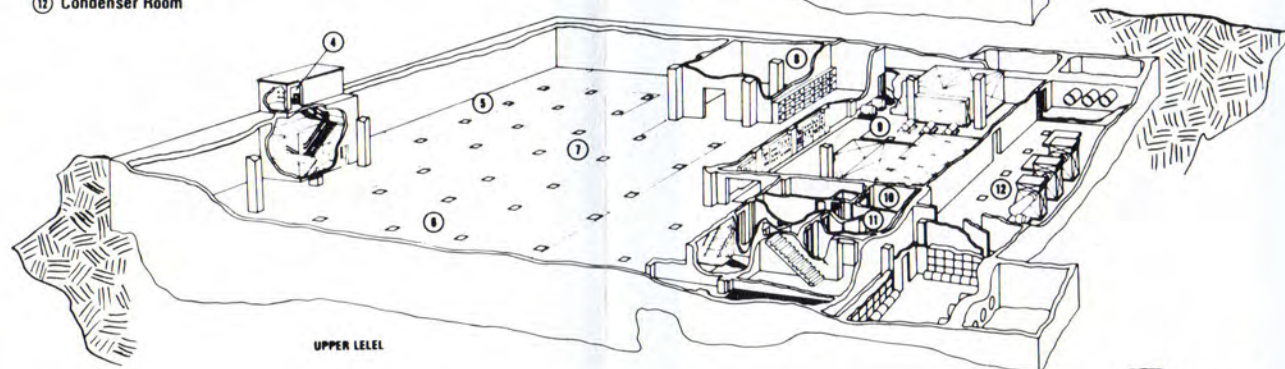


1. **Self-Sustaining**—Food, water, fuel and other necessities are provided to permit the Center and its personnel to operate over an extended period of time without outside assistance.
2. **Continually Cooled**—Heat generated by the telephone equipment will be more than adequate to heat the building during the winter months. Thus cooling is required year round. The air conditioning system at Lyons has a capacity in excess of 200 tons. This system is used when outside air will not provide adequate cooling.
3. **Air Supply**—Large air shafts are provided for the intake and exhaust of building air. Fresh air is continually mixed with the conditioned air to provide a healthy environment for personnel. All incoming air is double filtered.
4. **Emergency Electricity**—One 750-kilowatt turbine-alternator will provide electricity in the event of a commercial power failure.
5. **Water Supply**—Two wells feed a large storage tank insuring an adequate supply of water in case of a disaster.
6. **Decontamination Shower**—A special shower area is provided to remove radioactive dust from personnel after a nuclear blast.
7. **Radio**—The tower above the building supports microwave radio antennas. This enables us to connect with the Omaha-Fargo radio relay route.
8. **Telephone Equipment**—Telephone equipment will occupy about 75% of the available floor space. In addition to the L-4 and message equipment, Lyons will contain the No. 1 Electronic Switching System. This system uses solid state electronic devices in place of the traditional mechanical relays.
9. **DC Power Plants**—This equipment converts the commercial AC power to DC voltages required by the telephone equipment. Associated batteries are provided to eliminate outages which might otherwise result during an AC failure.
10. **Building Design**—Walls up to 2 feet thick, special shock mounts on all equipment, and other features combine to make the Lyons building nearly impervious to all external disasters short of a direct nuclear hit.

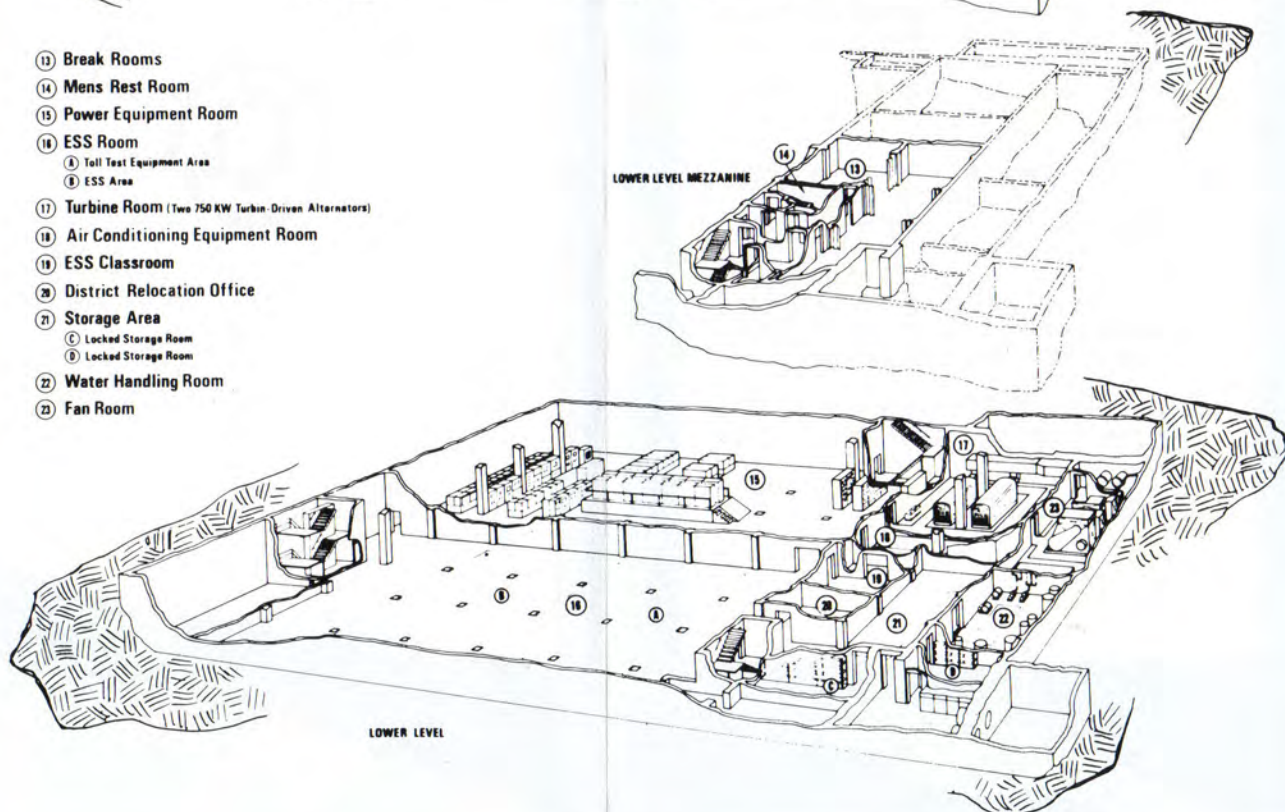


**American Telephone & Telegraph Company**  
LYONS COMMUNICATION CENTER

- ① Main Entrance and Exit
- ② Conference Room
- ③ Womens Rest Room
- ④ Alternate Exit
- ⑤ Radio Equipment Area
- ⑥ Toll Equipment Area
- ⑦ L-4 Equipment Area
- ⑧ Administrative Room
- ⑨ Air Conditioning Equipment Room
- ⑩ Mens Rest Room
- ⑪ Decontamination Room
- ⑫ Condenser Room



- ⑬ Break Rooms
- ⑭ Mens Rest Room
- ⑮ Power Equipment Room
- ⑯ ESS Room
- ⑰ Toll Test Equipment Area
- ⑱ ESS Area
- ⑲ Turbine Room (Two 750 KW Turbin Driven Alternators)
- ⑳ Air Conditioning Equipment Room
- ㉑ ESS Classroom
- ㉒ District Relocation Office
- ㉓ Storage Area
- ㉔ Locked Storage Room
- ㉕ Locked Storage Room
- ㉖ Water Handling Room
- ㉗ Fan Room





AUTOVON

# CONUS AUTOVON SWITCHING CENTERS

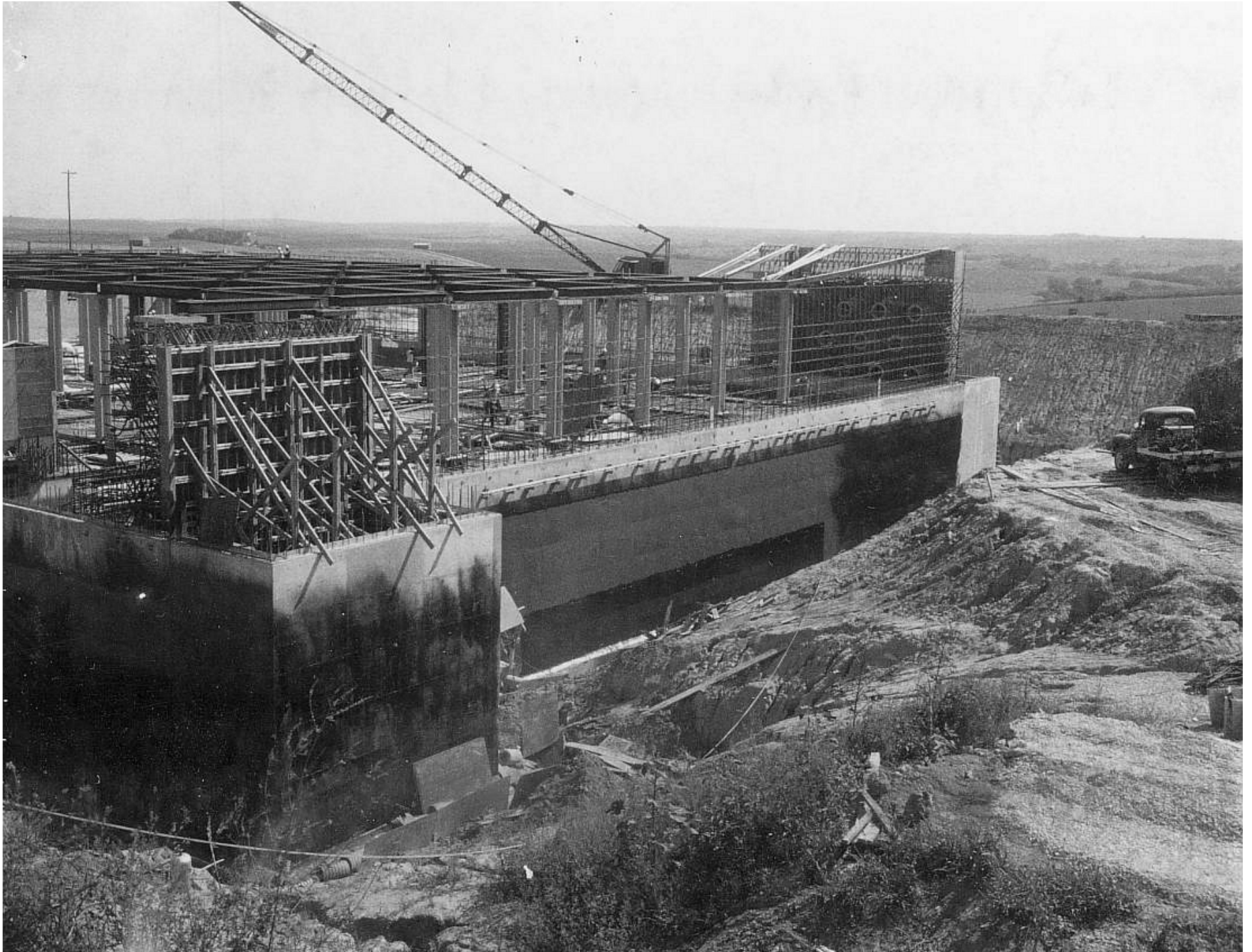
SECTION 1



GS - LONG LINES

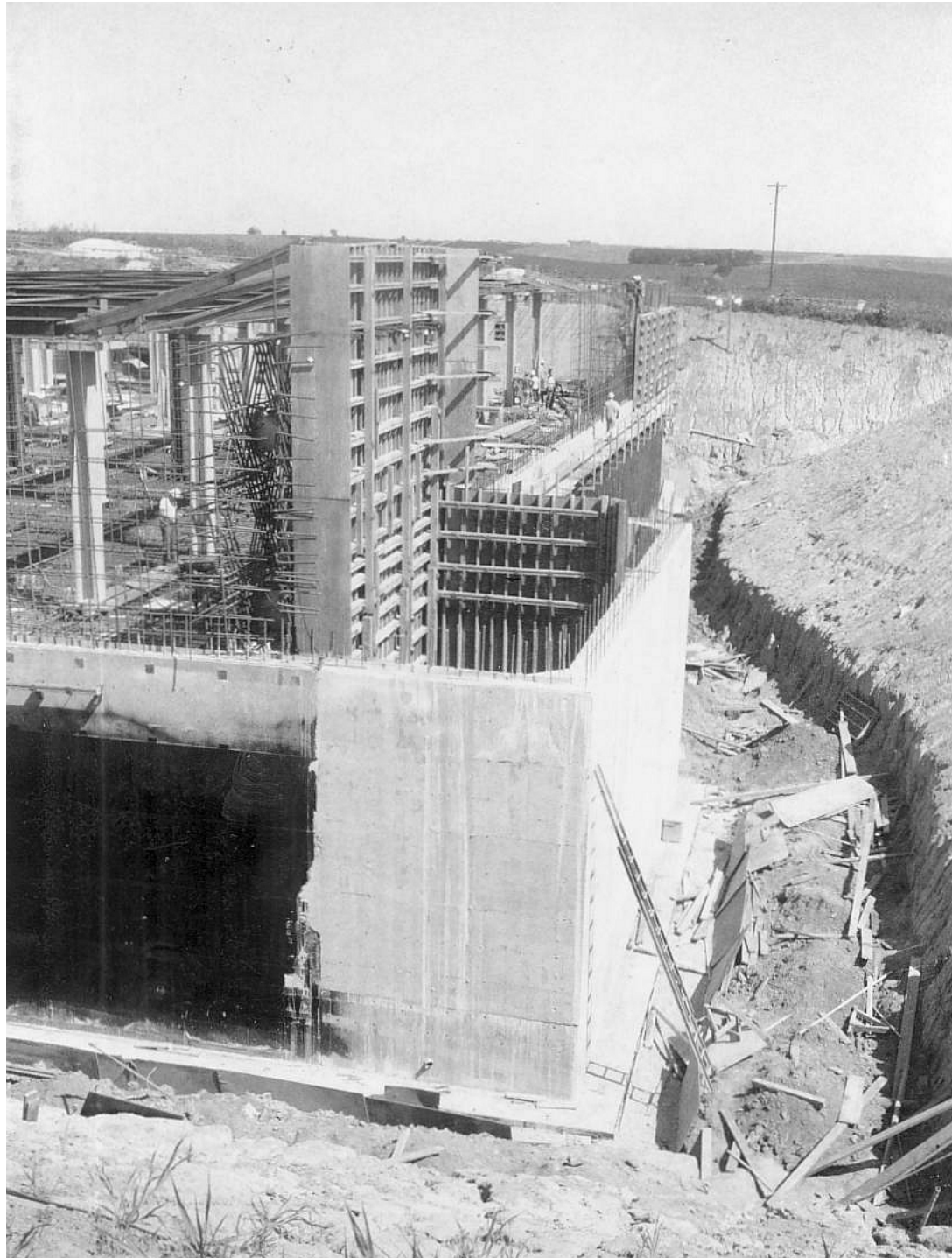
EXHIBIT  
SEPTEMBER 1979

54 Le-T



Lyons Communications Center | AUTOVON | 8-3-67 Fresh air intake shaft



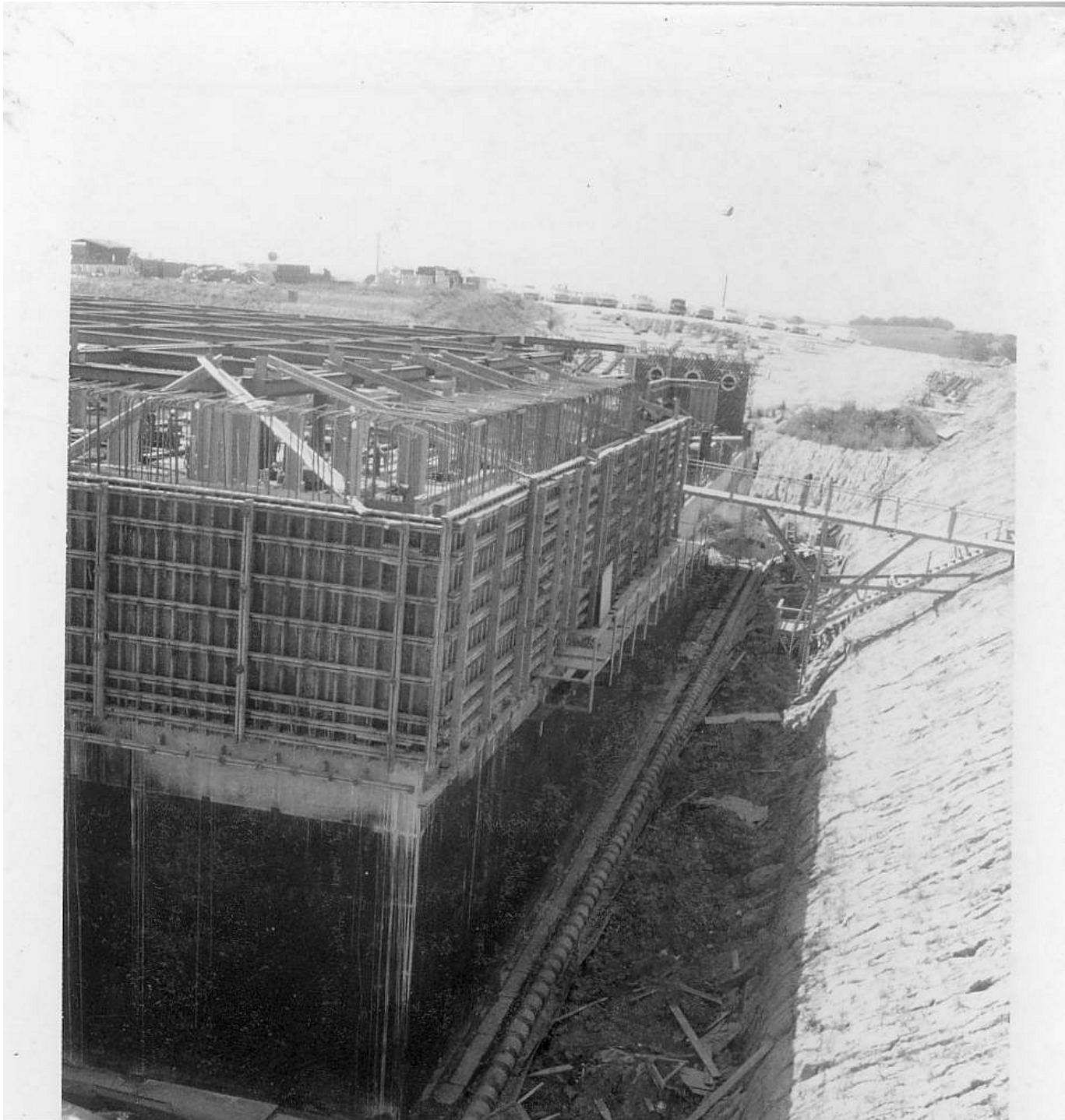


Lyons Communications Center | AUTOVON | 8-3-67 SE corner Engine exhaust shaft

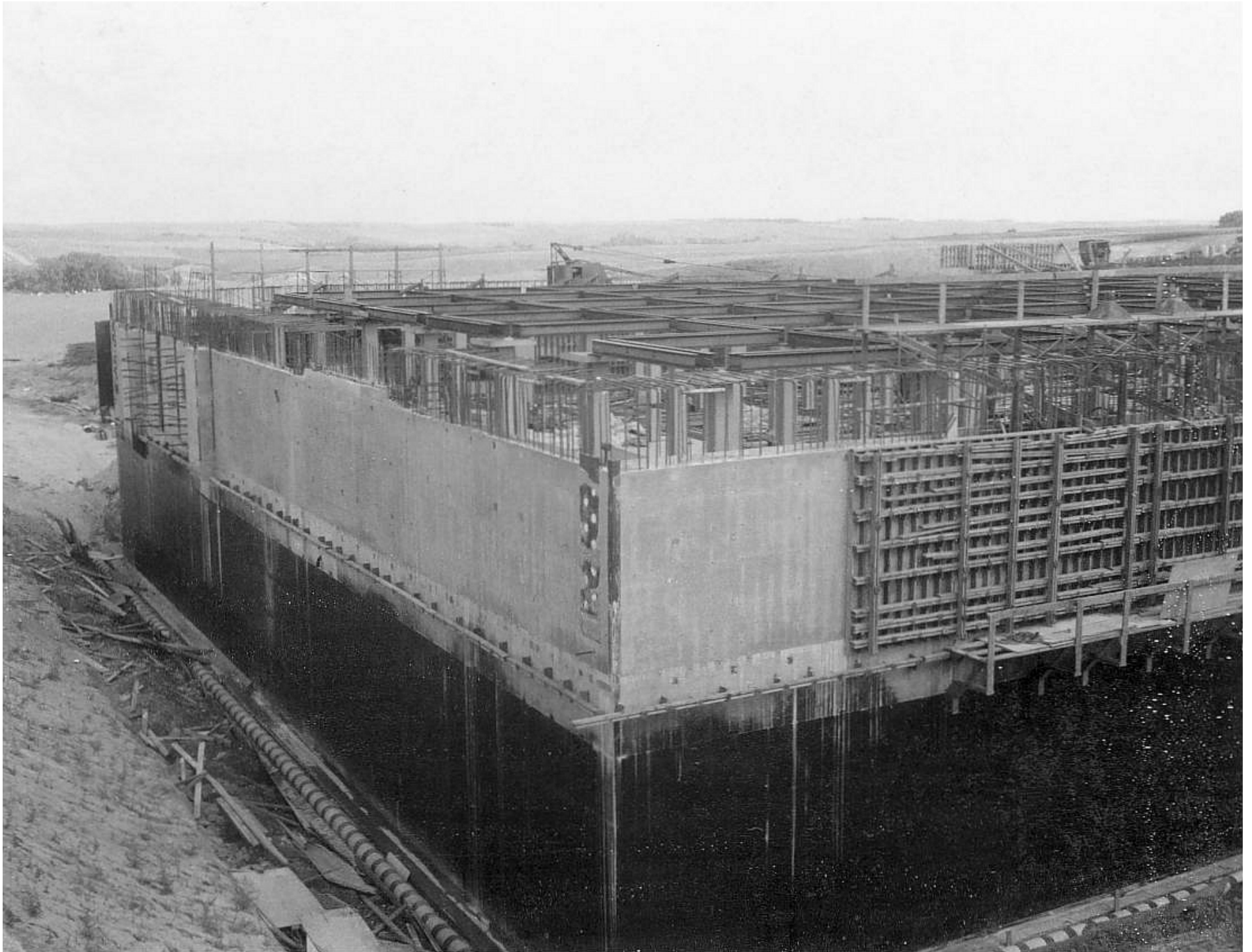


Lyons Communications Center | AUTOVON | 8-3-67 SW corner fresh air intake shaft



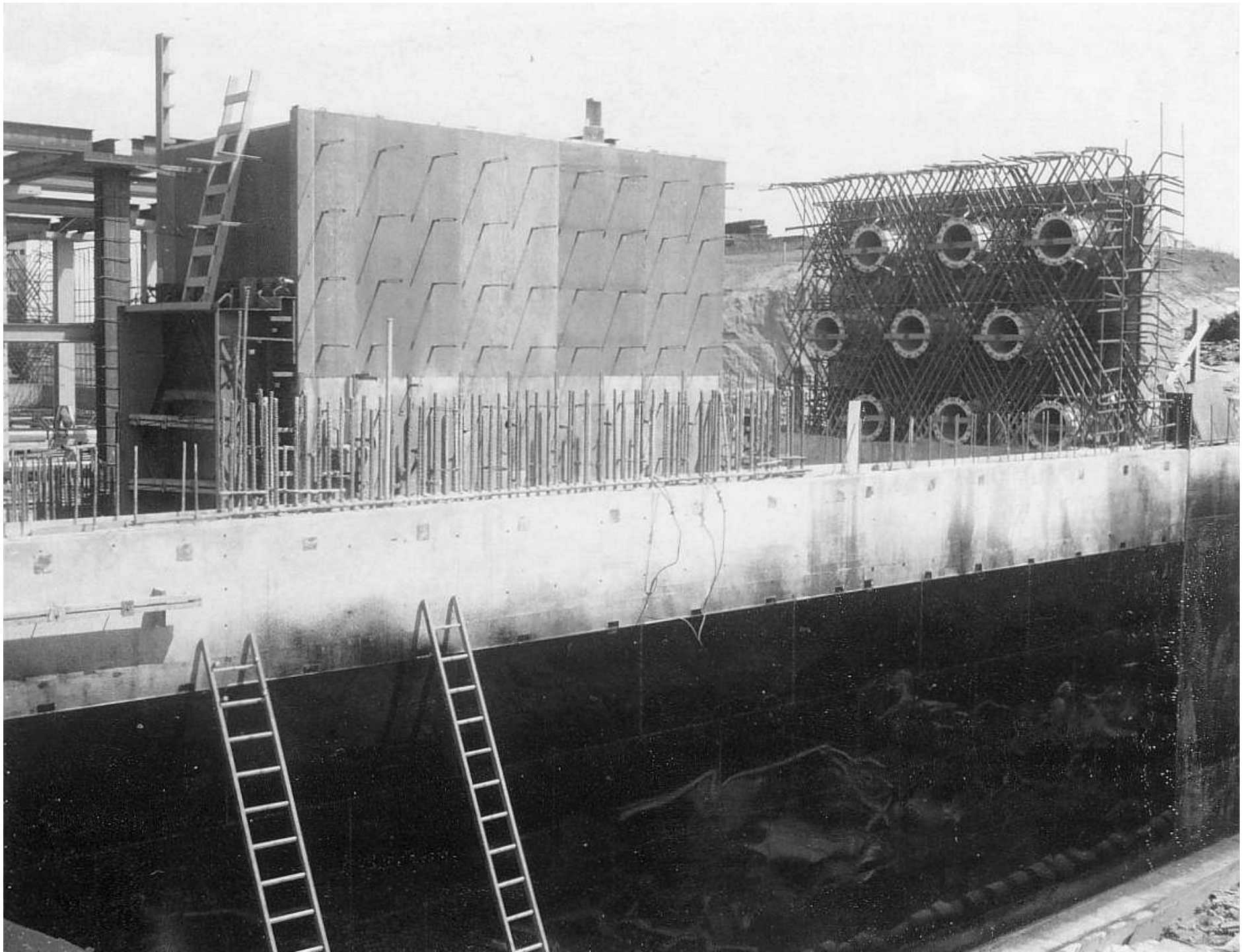


Lyons Communications Center | AUTOVON | 8-3-67 West



Lyons Communications Center | AUTOVON | 8-6-67 North upper level wall completed. Peripheral drain co





Lyons Communications Center | AUTOVON | 8-6-67 Upper portion of equipment shaft walls ready for embe





Lyons Communications Center | AUTOVON | 8-11-67 General view of the building from the SW corner





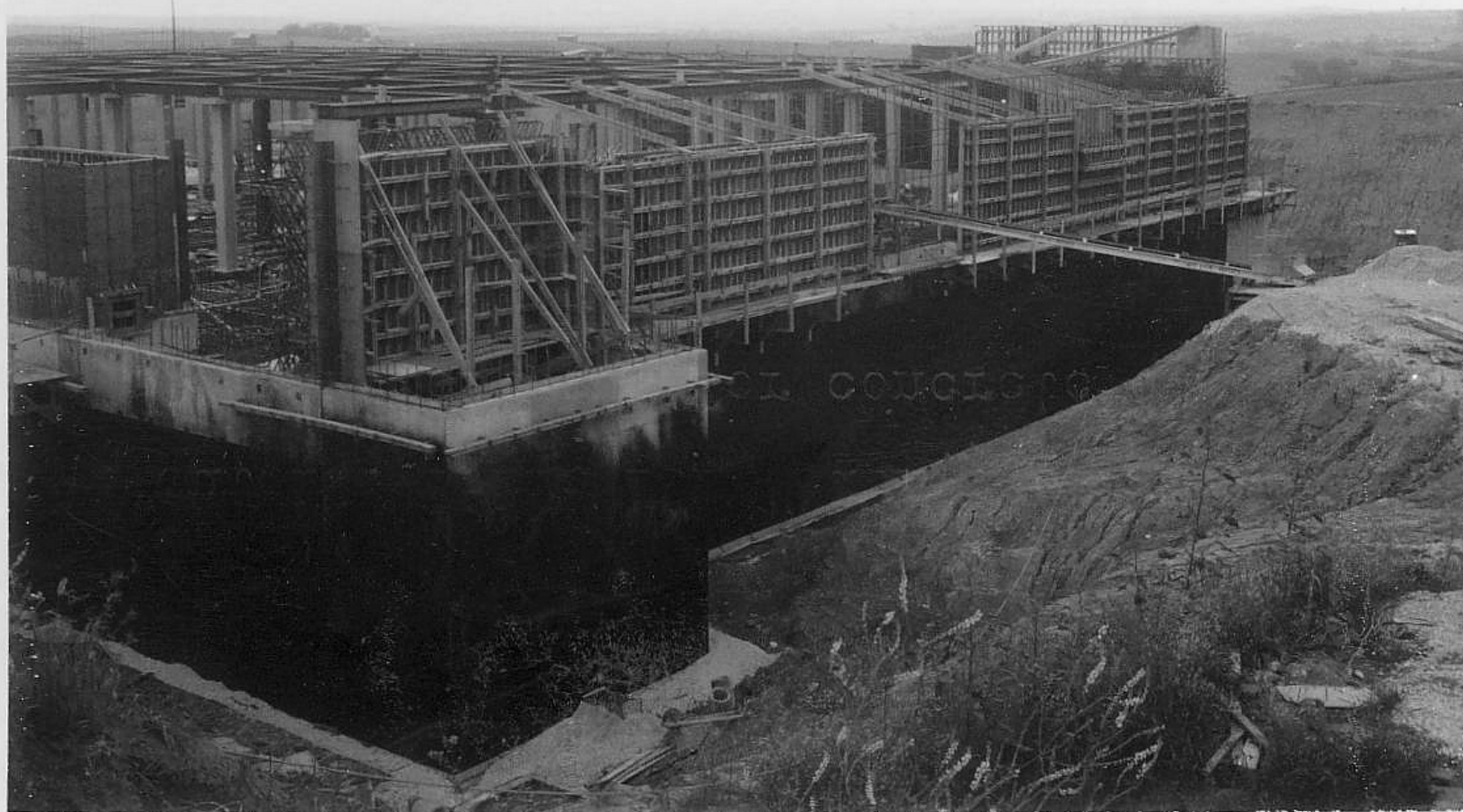
Lyons Communications Center | AUTOVON | 8-11-67 Using clam to place crushed rock over and around per





Lyons Communications Center | AUTOVON | 8-18-67 Formwork for stair #4



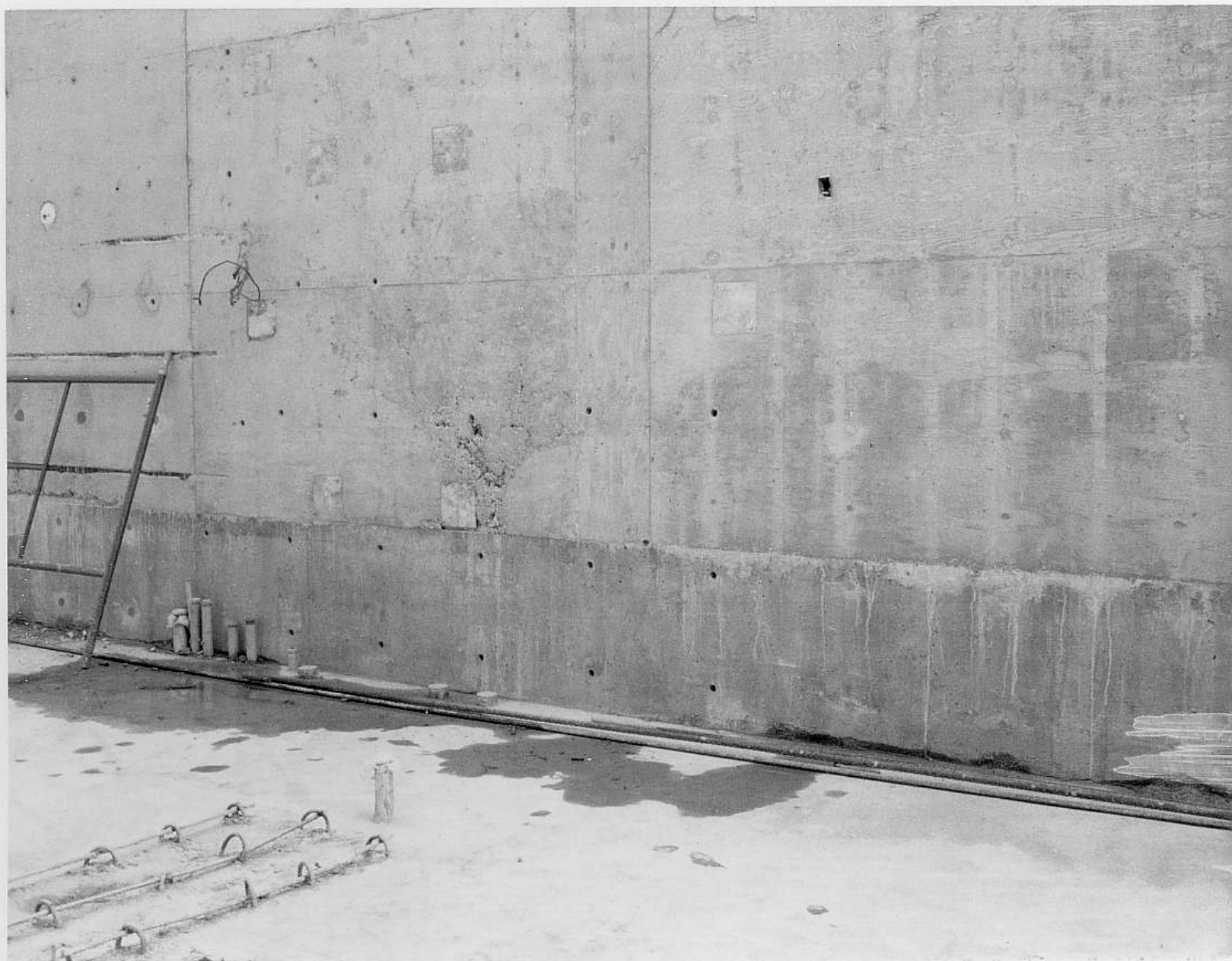


Lyons Communications Center | AUTOVON | 8-18-67 Outside forms for South exterior wall, with section



Lyons Communications Center | AUTOVON | 9-8-67 Partially completed and partially formed North wall o





Lyons Communications Center | AUTOVON | 9-8-67 The only honeycombed area of any consequence in the b



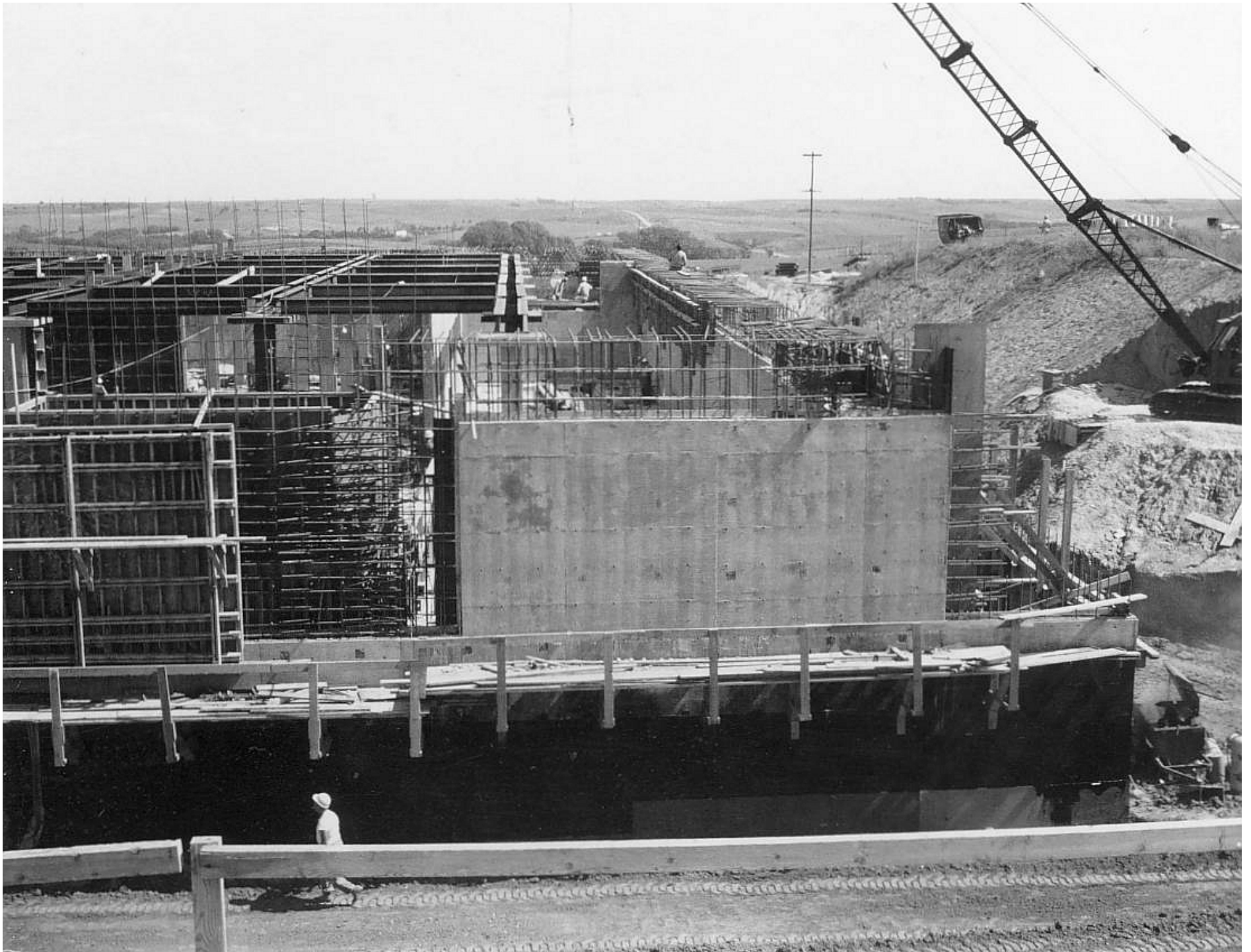
Lyons Communications Center | AUTOVON | 9-8-67 View of building from SW corner. Upper level exterior





Lyons Communications Center | AUTOVON | 9-15-67 Desc continued- Note roof beams above the wall at co





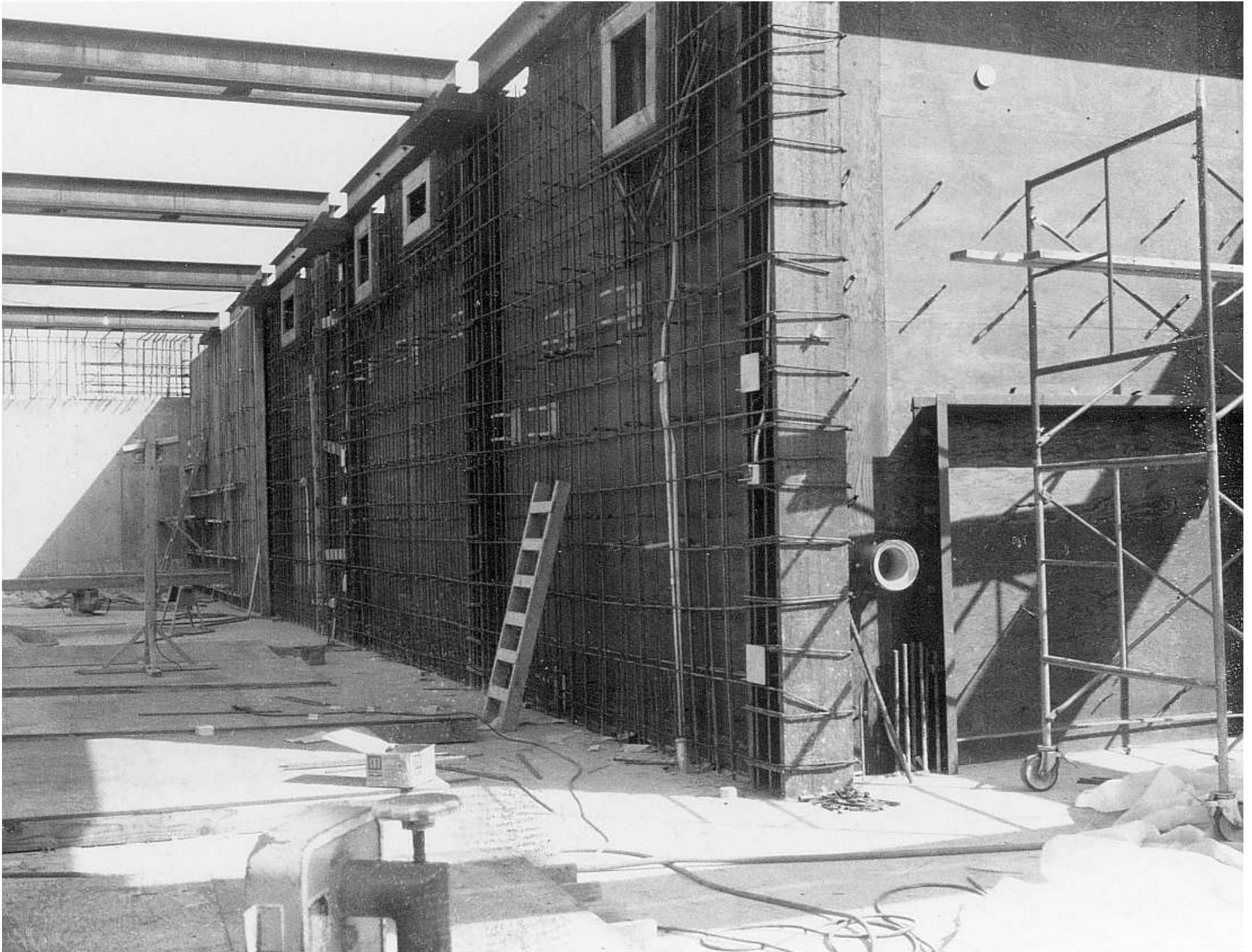
Lyons Communications Center | AUTOVON | 9-15-67 Looking East along South wall, showing inside wall f





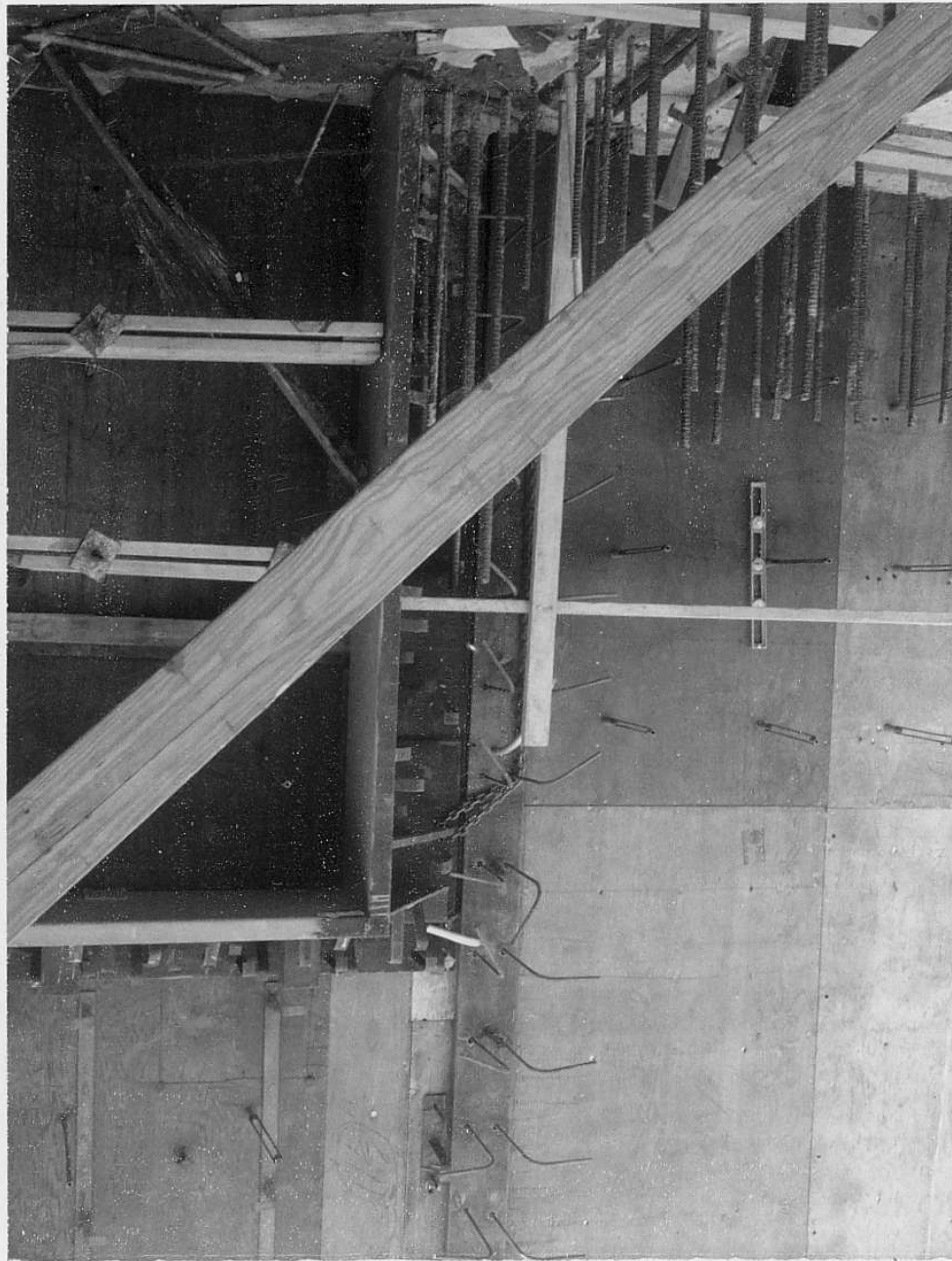
Lyons Communications Center | AUTOVON | 9-15-67 Looking East along the north wall, at backfill opera





Lyons Communications Center | AUTOVON | 9-15-67 Looking east down wall at column line E. This is N w





Lyons Communications Center | AUTOVON | 9-15-67 Metal keyway for shielding at wall between equipment



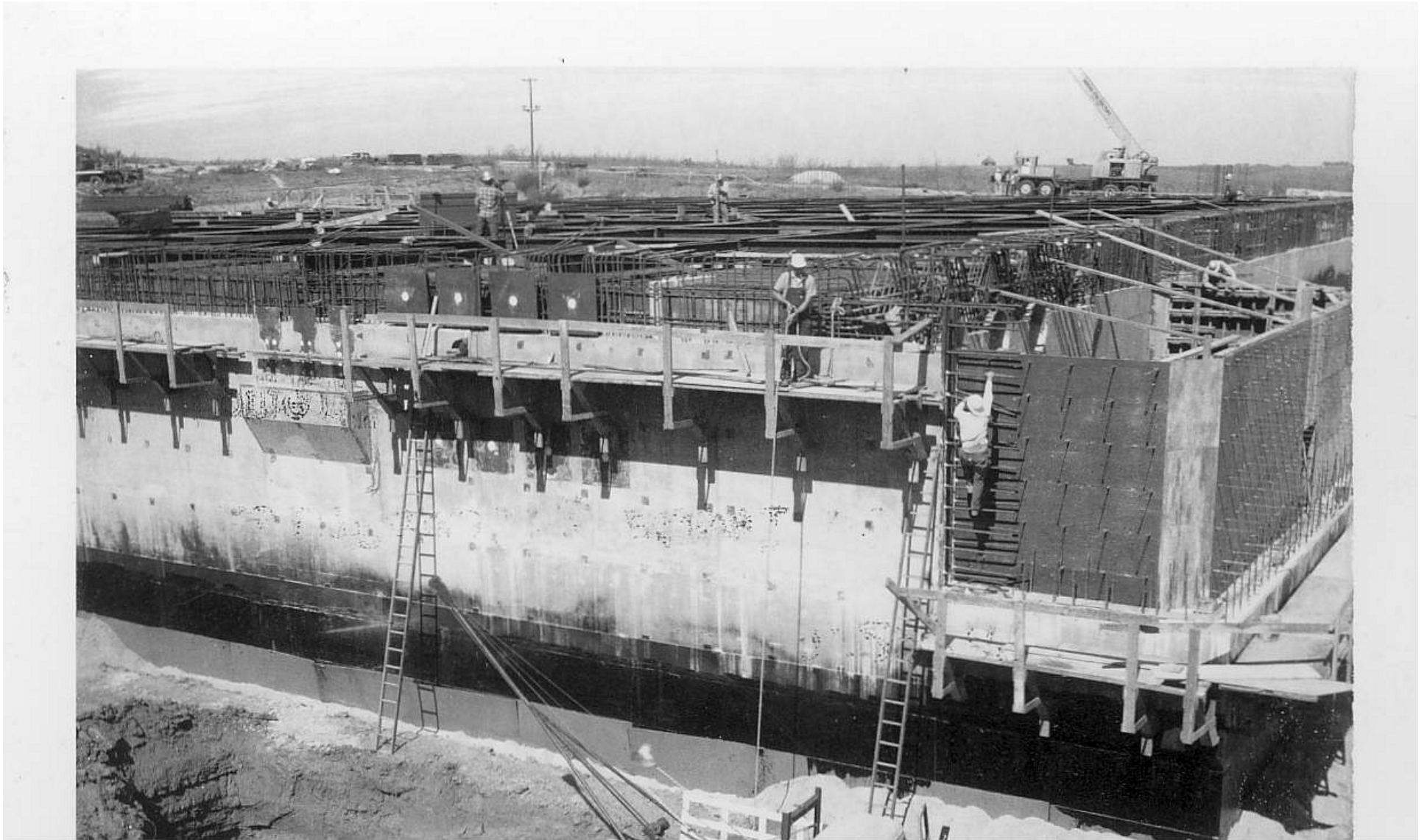


Lyons Communications Center | AUTOVON | 9-15-67 View of the building from the SW corner. Backfill sh





Lyons Communications Center | AUTOVON | 9-22-67 General view of building from SW corner



Lyons Communications Center | AUTOVON | 9-22-67 SE corner of build showing forming of exh. shaft, h





Lyons Communications Center | AUTOVON | 9-22-67 Starting to weld tower pier reinforcing steel at col





Lyons Communications Center | AUTOVON | 9-25-67 Excavation in backfill of bulding required to uncove



Lyons Communications Center | AUTOVON | 9-29-67 Decking for roof slab, 3 bays wide and 3 and half ba





Lyons Communications Center | AUTOVON | 9-29-67 reinforcing steel at upper level walls of exhaust sh



Lyons Communications Center | AUTOVON | 9-29-67 Start of excavation for fuel oil and water storage





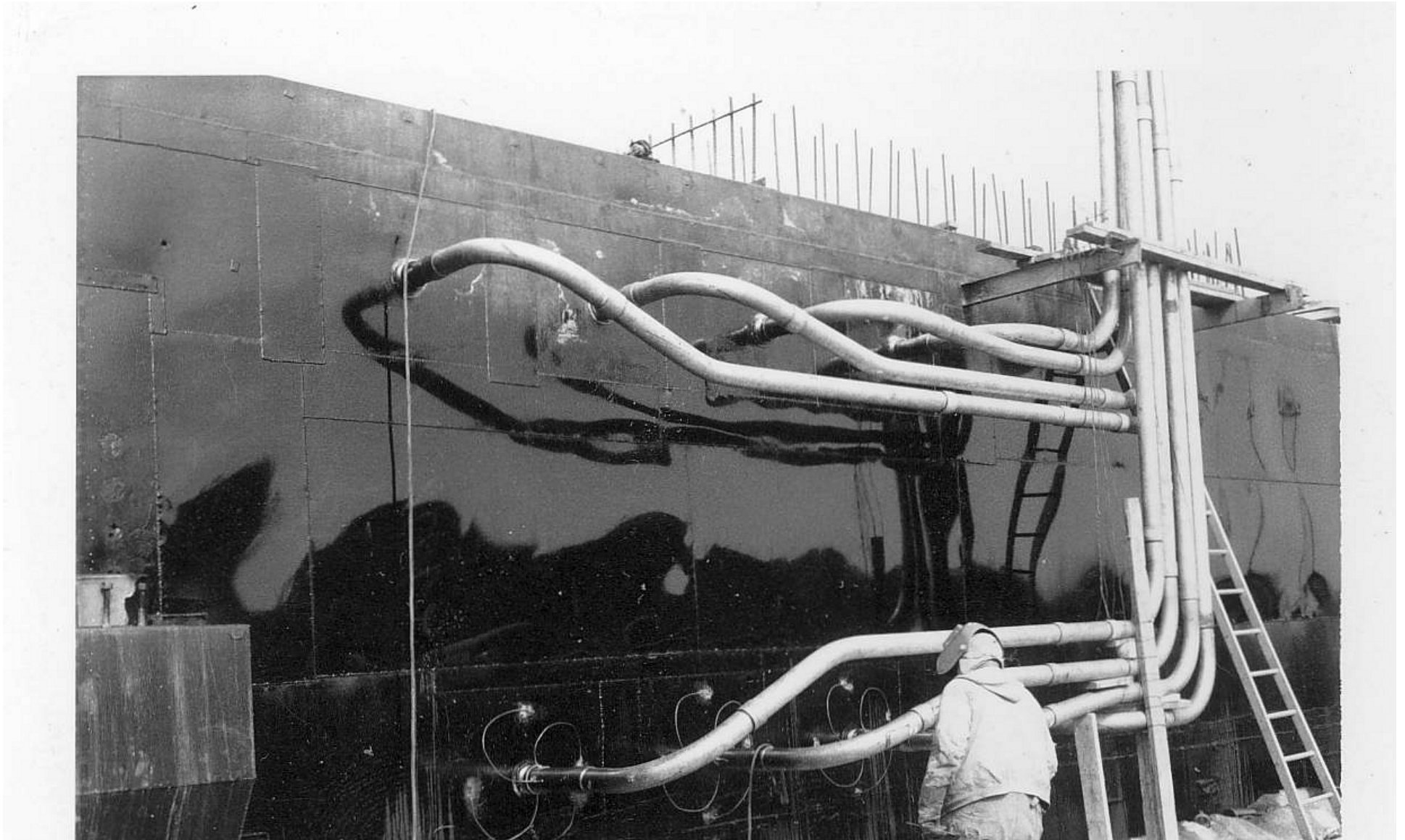
Lyons Communications Center | AUTOVON | 9-29-67 Vertical reinforcing rods welded to billet at column





Lyons Communications Center | AUTOVON | 9-29-67 View of building from SW corner showing concrete beams



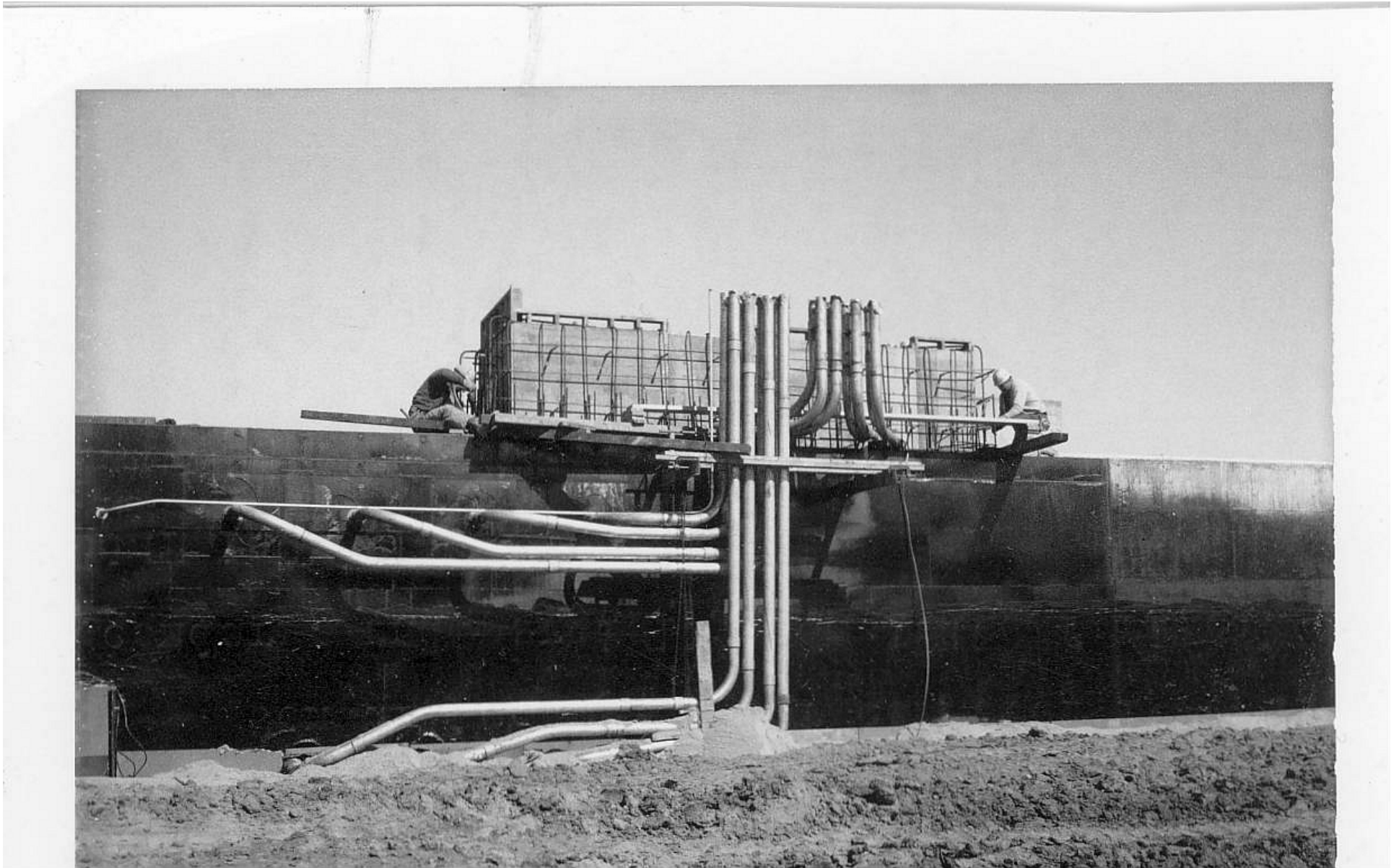


Lyons Communications Center | AUTOVON | Lyons 3-6-68 Conduit runs in south wall for secondary power

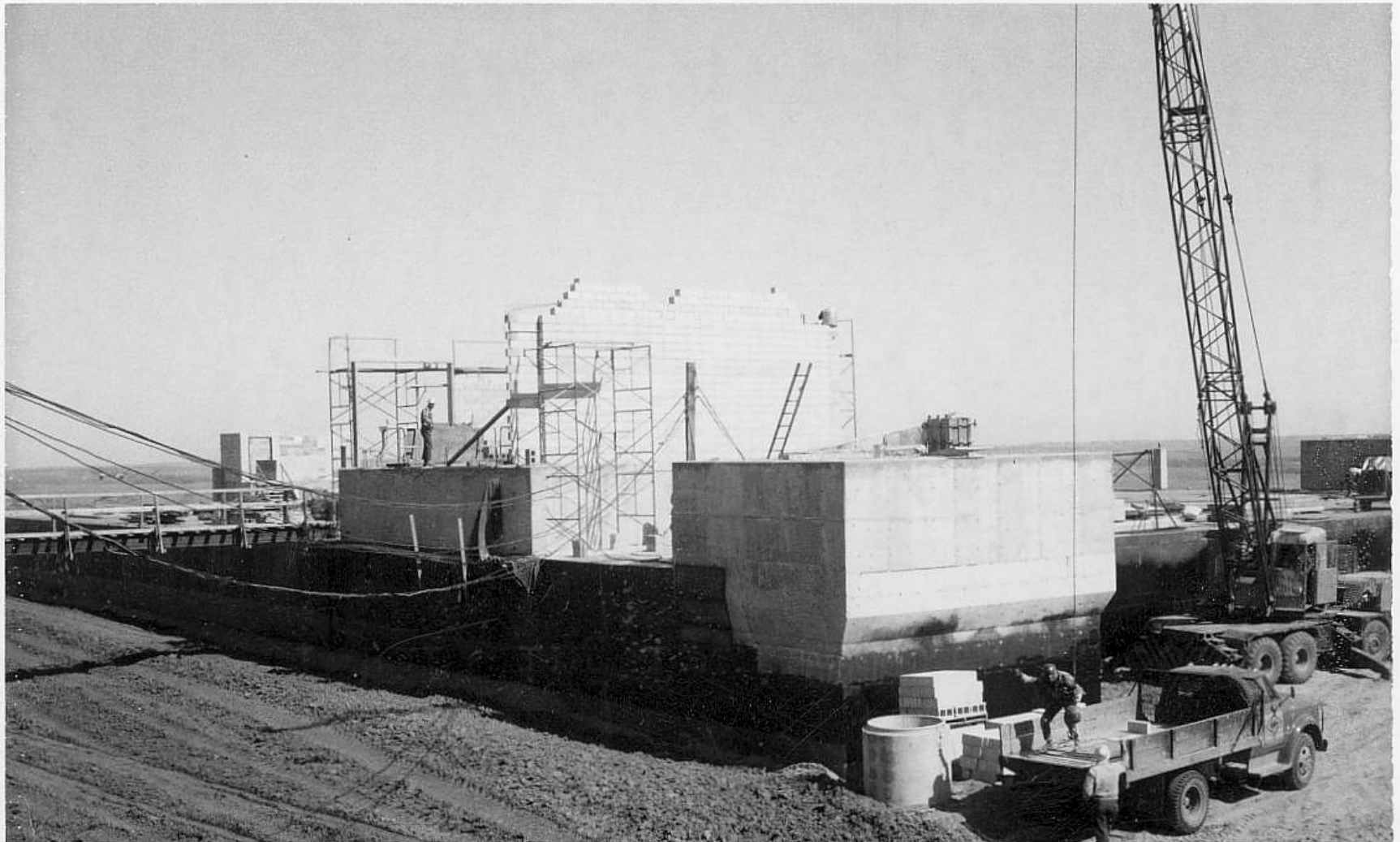


Lyons Communications Center | AUTOVON | Lyons 3-6-68 Looking SE showing wave guide shafts and tower



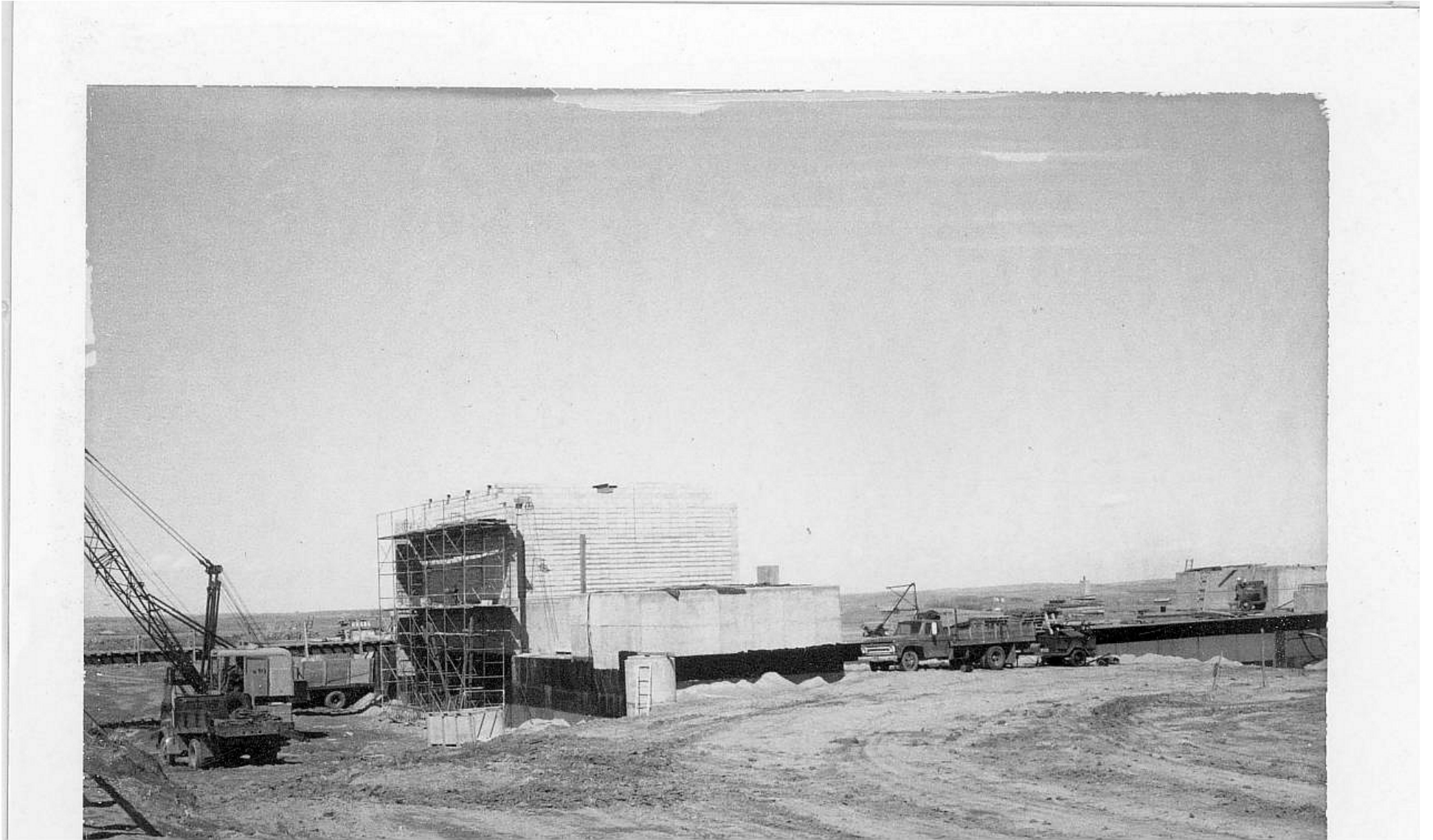


Lyons Communications Center | AUTOVON | Lyons 3-15-68 conduit entrance for commercial power secondar



Lyons Communications Center | AUTOVON | Lyons 3-15-68 View of building from SW corner





Lyons Communications Center | AUTOVON | Lyons 3-27-68 Above grade-entrance structure

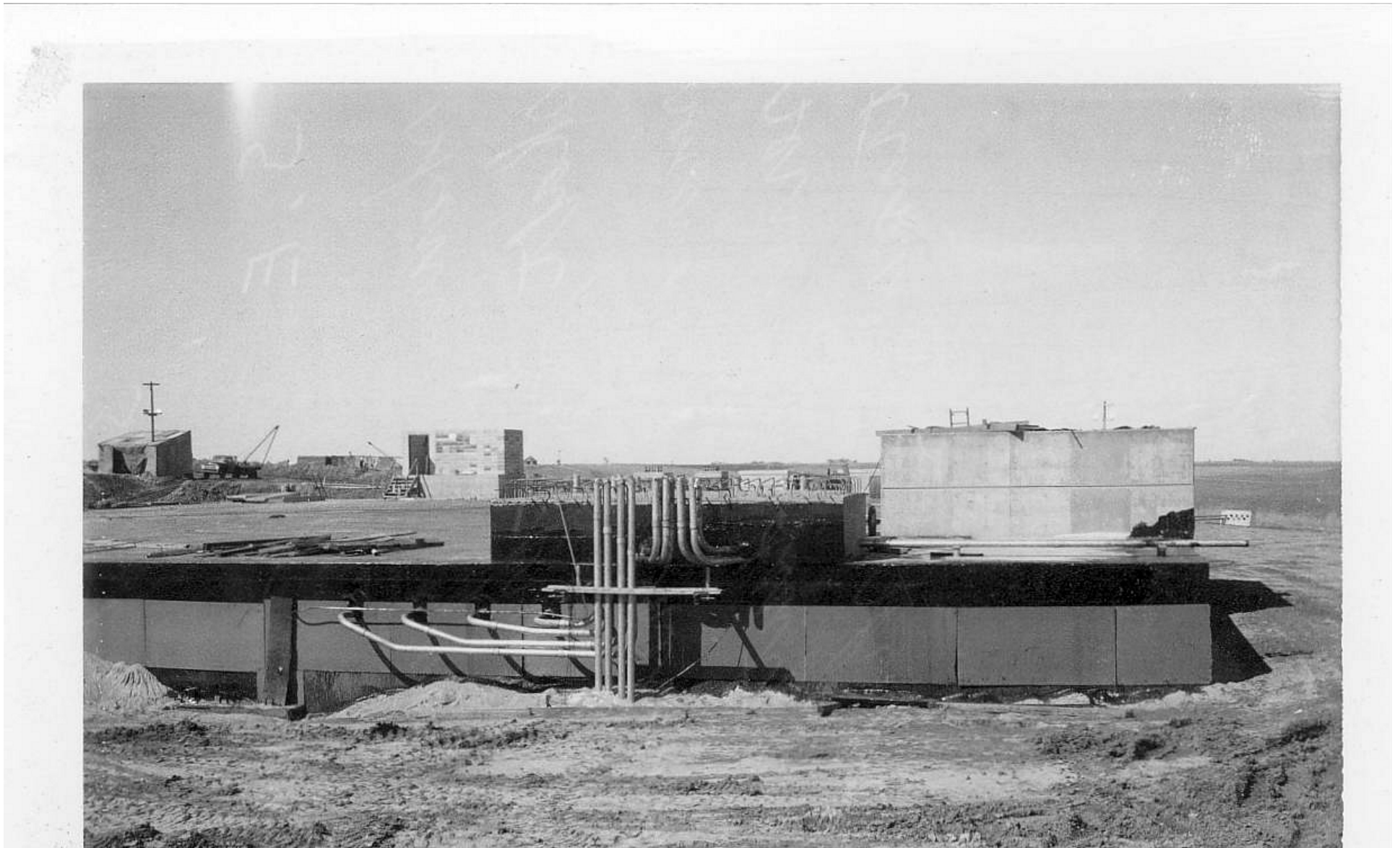


Lyons Communications Center | AUTOVON | Lyons 3-27-68 Concrete encased fuel tanks (4) \_ water tank





Lyons Communications Center | AUTOVON | Lyons 3-27-68 Garage



Lyons Communications Center | AUTOVON | Lyons 3-27-68 South East corner showing engine exhaust shaft





Lyons Communications Center | AUTOVON | Lyons 3-27-68 View from NE cable entrance showing headwall s





Lyons Communications Center | AUTOVON | Lyons 3-29-68 API casing \_ headwall at NW corner of b





Lyons Communications Center | AUTOVON | Lyons 3-29-68 API casings \_ headwall at east side of buildin





Lyons Communications Center | AUTOVON | Lyons 4-5-68 Placing concrete in retaining wall beside above



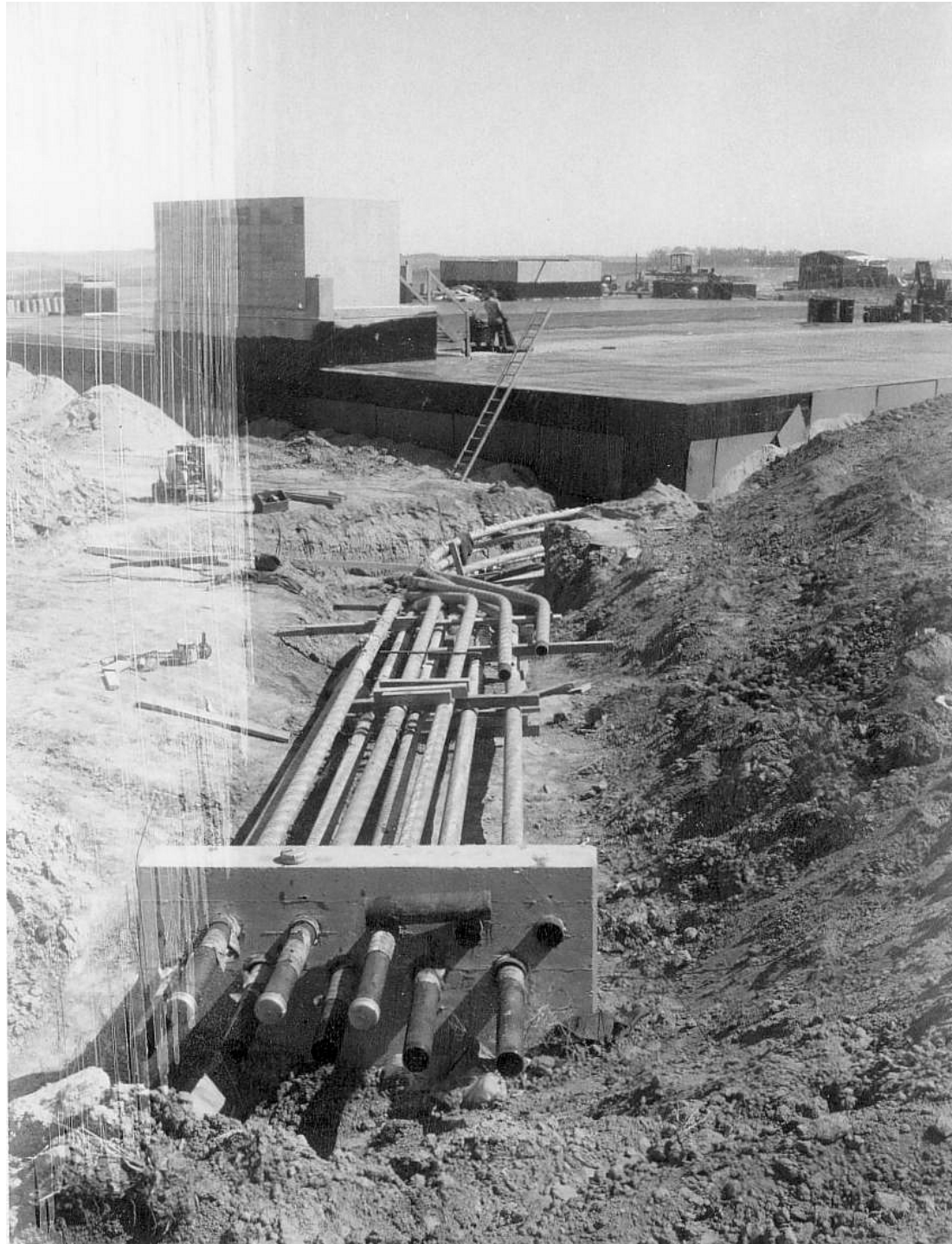


Lyons Communications Center | AUTOVON | Lyons 4-5-68 View east along the north wall, showing extent



Lyons Communications Center | AUTOVON | Lyons 4-5-68 View of the south side of the building showing





Lyons Communications Center | AUTOVON | Lyons 4-10-68 Cable entrance conduits at NW corner



Lyons Communications Center | AUTOVON | Lyons 4-10-68 Completed API casings at the NW corner of buil





Lyons Communications Center | AUTOVON | Lyons 4-10-68 Fresh air intake shaft \_ above grade shelter I



Lyons Communications Center | AUTOVON | Lyons 4-10-68 Fuel oil tanks \_ pipe support beams looking no





Lyons Communications Center | AUTOVON | Lyons 4-10-68 Three steel beams carrying fuel and electric s



Lyons Communications Center | AUTOVON | Lyons 4-11-68 Starting of backfill on the building roof look





Lyons Communications Center | AUTOVON | Lyons 4-12-68 Backfilling along north side of building looki

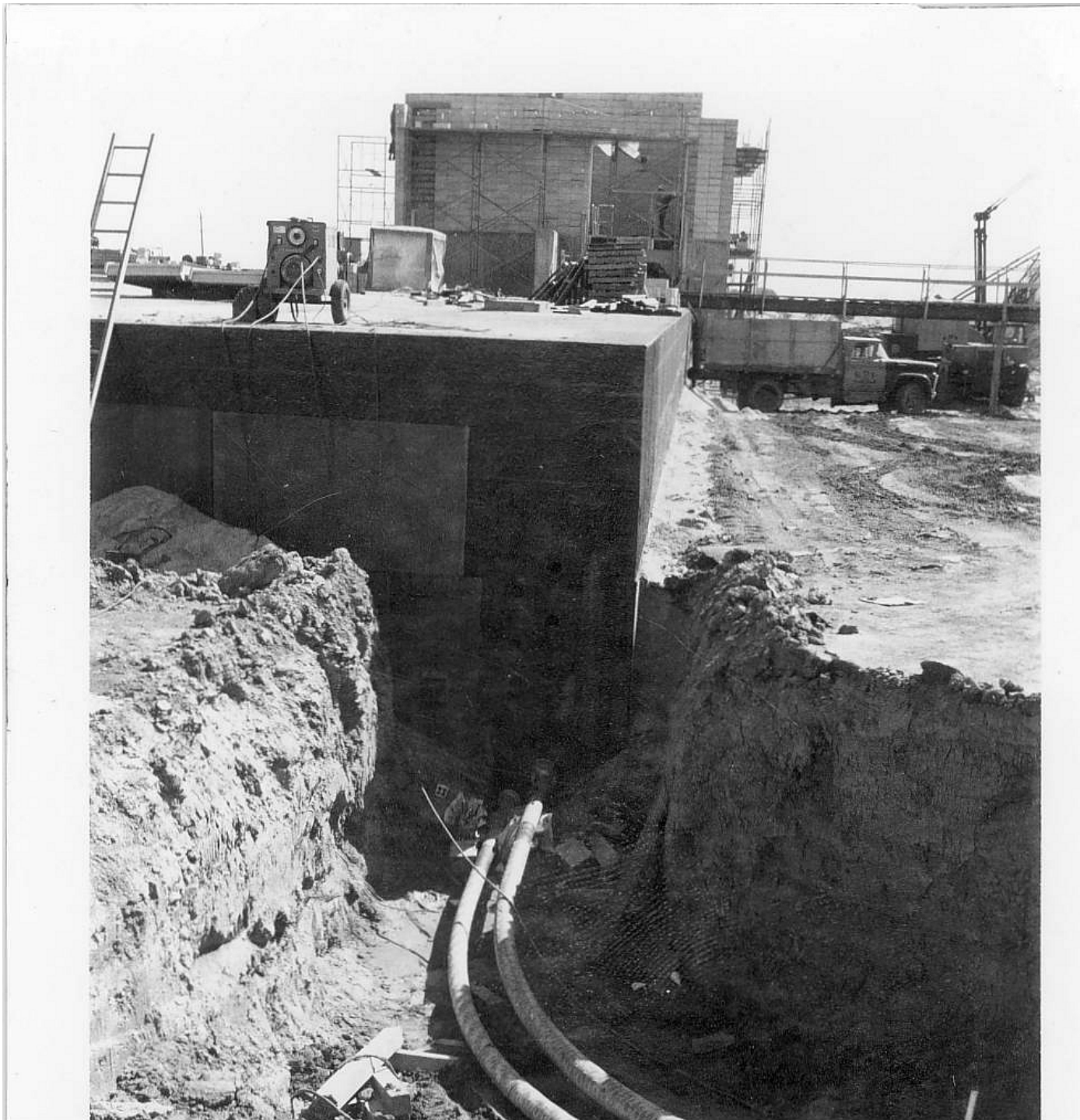


Lyons Communications Center | AUTOVON | Lyons 4-12-68 Fuel tank pipeline \_ beams at south side of bu





Lyons Communications Center | AUTOVON | 03-27-68 entrance structure

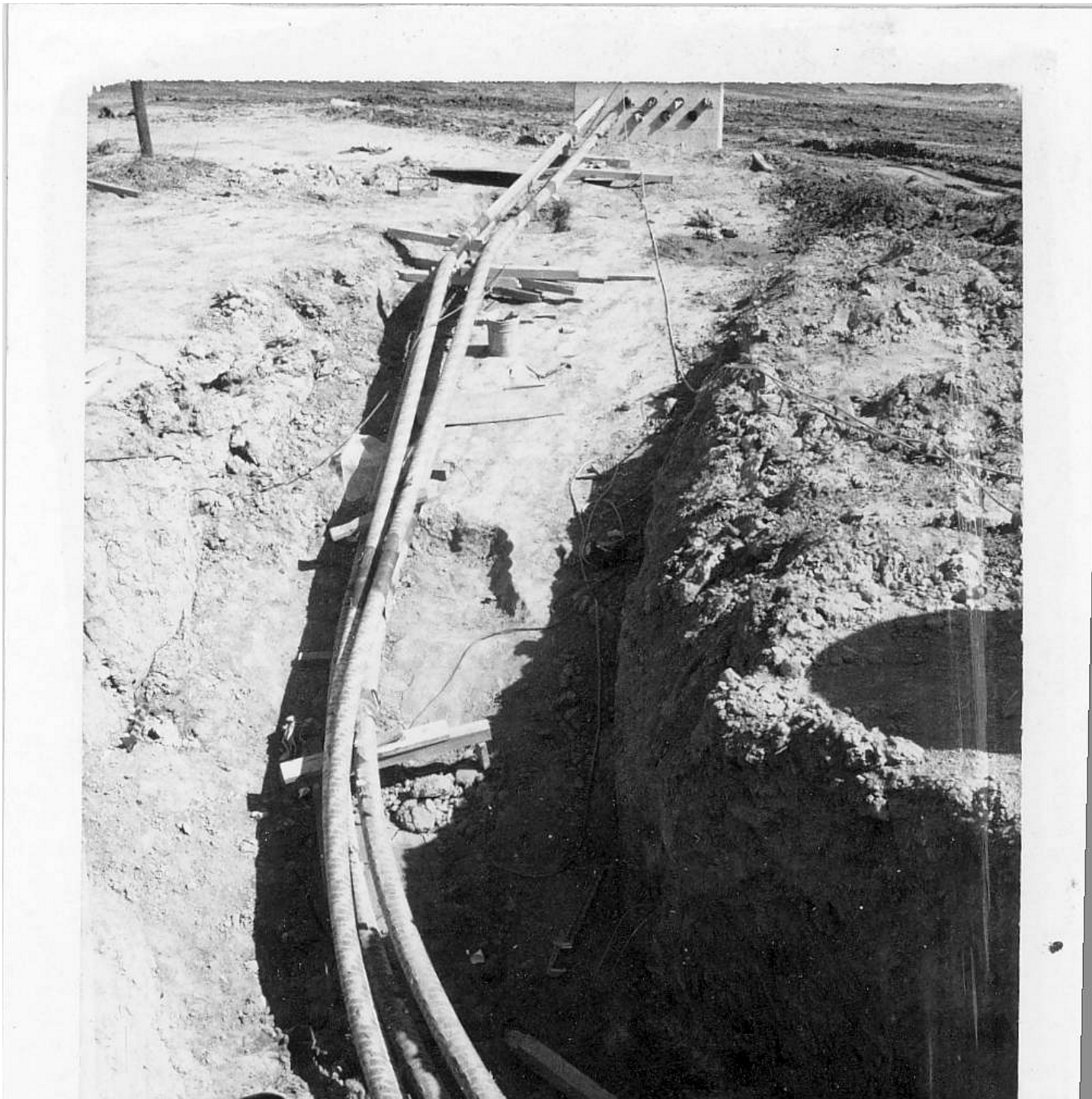


Lyons Communications Center | AUTOVON | 03-27-68 NE cable entrance conduits





Lyons Communications Center | AUTOVON | 03-27-68 North E wave guide entrance



Lyons Communications Center | AUTOVON | 03-29-68 API casings headwall





Lyons Communications Center | AUTOVON | 04-5-68 North east wall



Lyons Communications Center | AUTOVON | 04-5-68 south NW corner





Lyons Communications Center | AUTOVON | 04-10-68 Electrical conduit





Lyons Communications Center | AUTOVON | 04-10-68 Fuel tanks \_ shelter





Lyons Communications Center | AUTOVON | 04-12-68 wetting down roof backfill



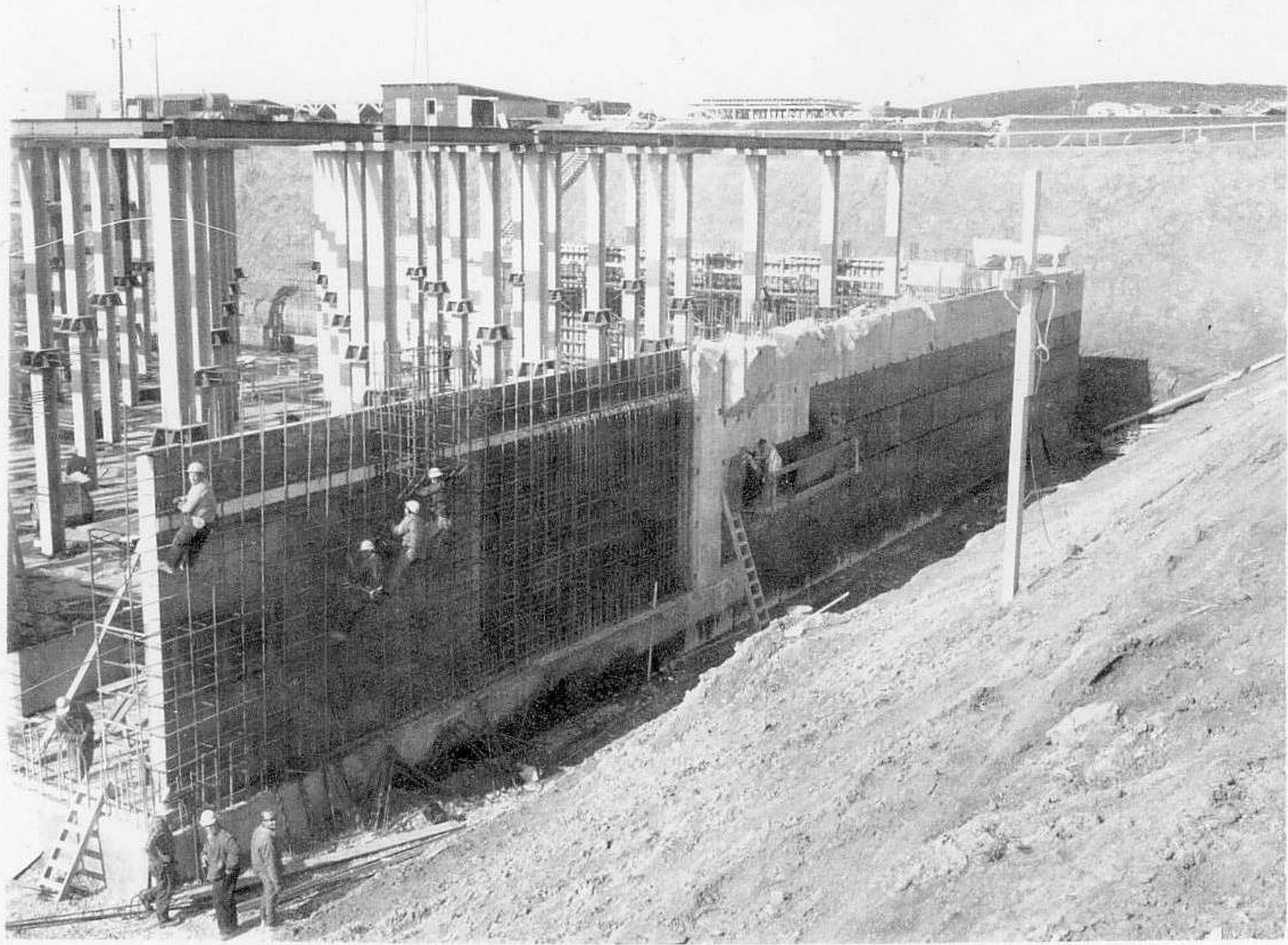
Lyons Communications Center | AUTOVON | 04-20-67 view of the job site





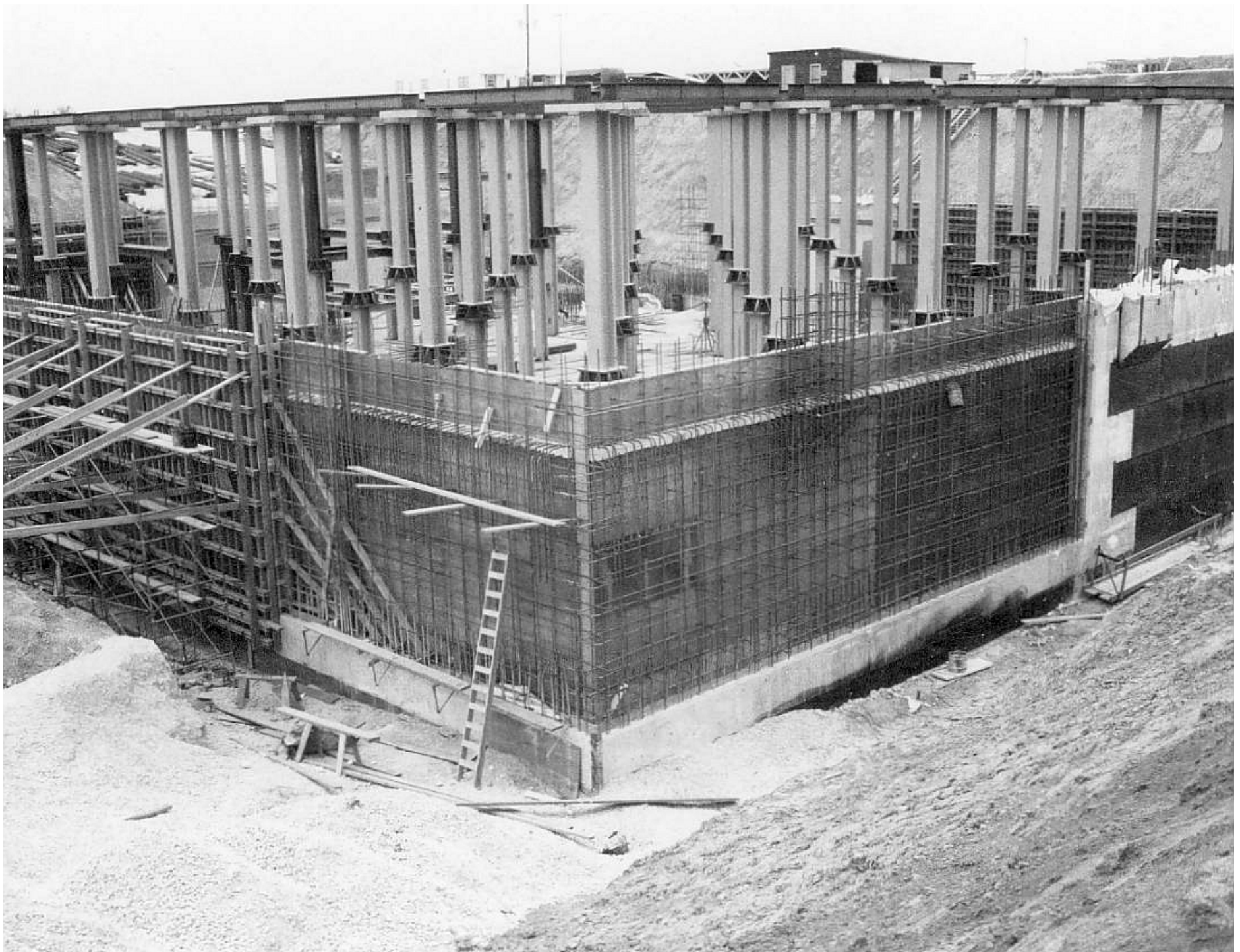
Lyons Communications Center | AUTOVON | 04-21-67 5-00 pm





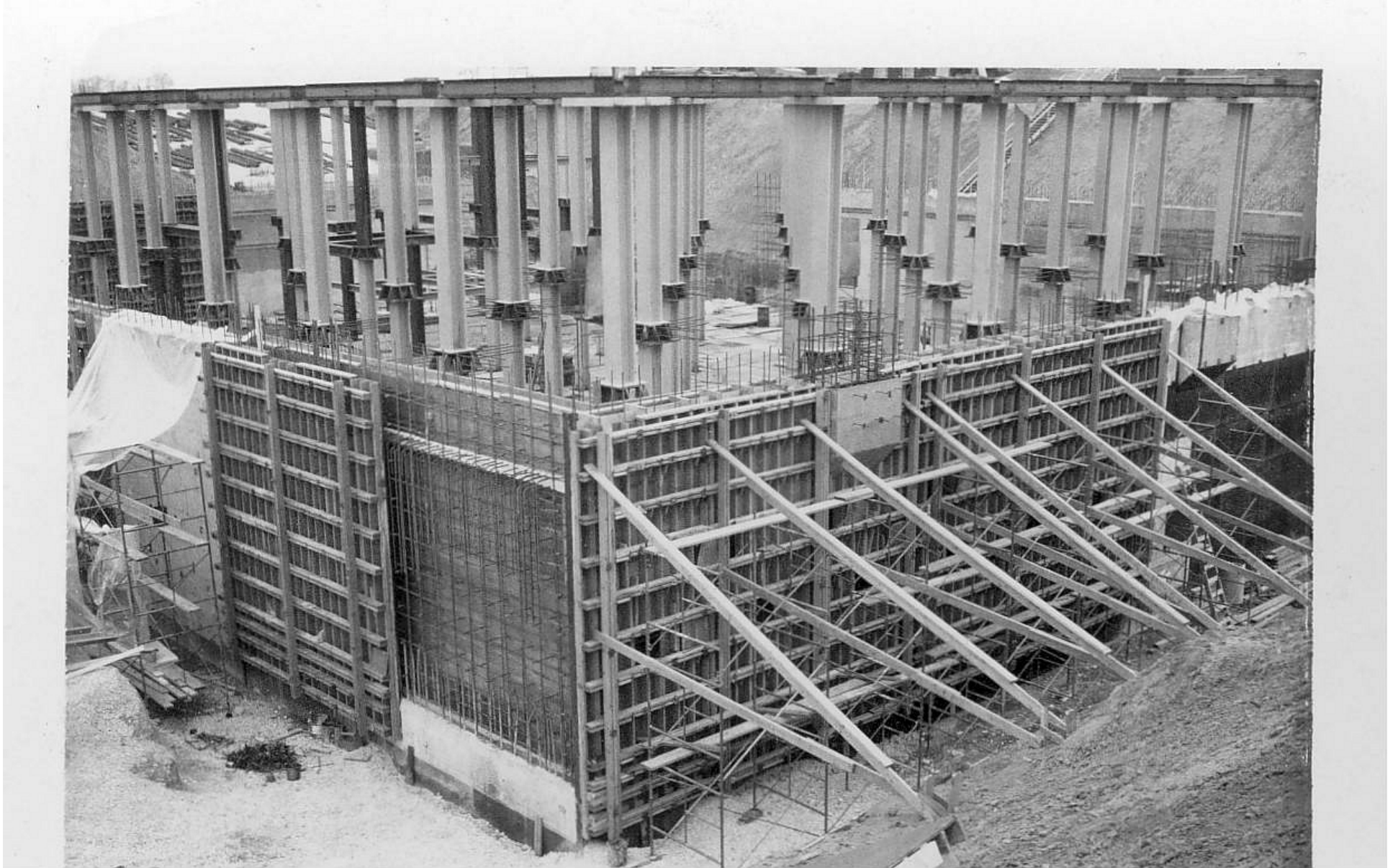
Lyons Communications Center | AUTOVON | 04-27-67





Lyons Communications Center | AUTOVON | 05-1-67 NE corner showing forms





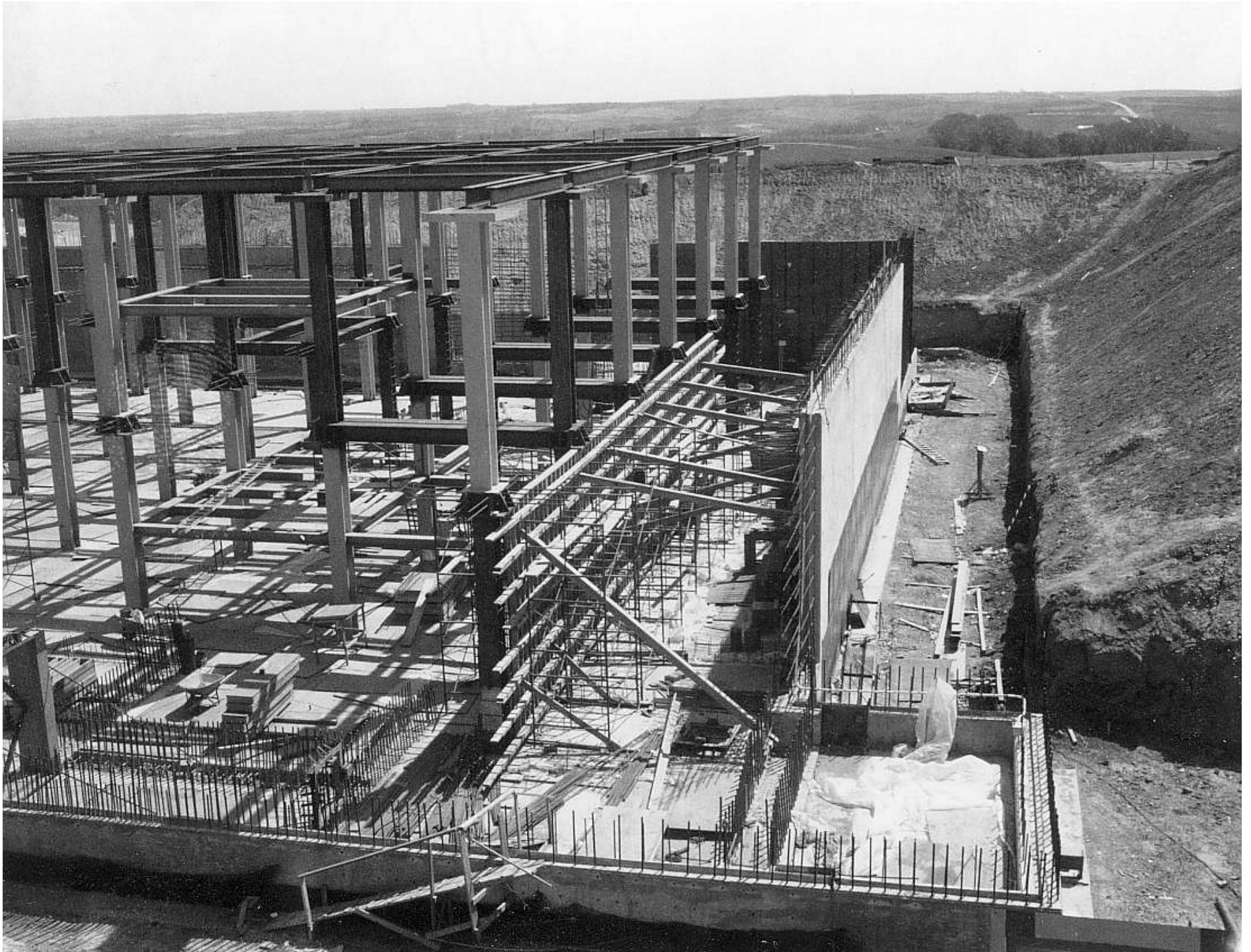
Lyons Communications Center | AUTOVON | 05-5-67 NE corner formwork





Lyons Communications Center | AUTOVON | 05-9-67 concrete in NE corner walls





Lyons Communications Center | AUTOVON | 05-20-67 formwork interior wall



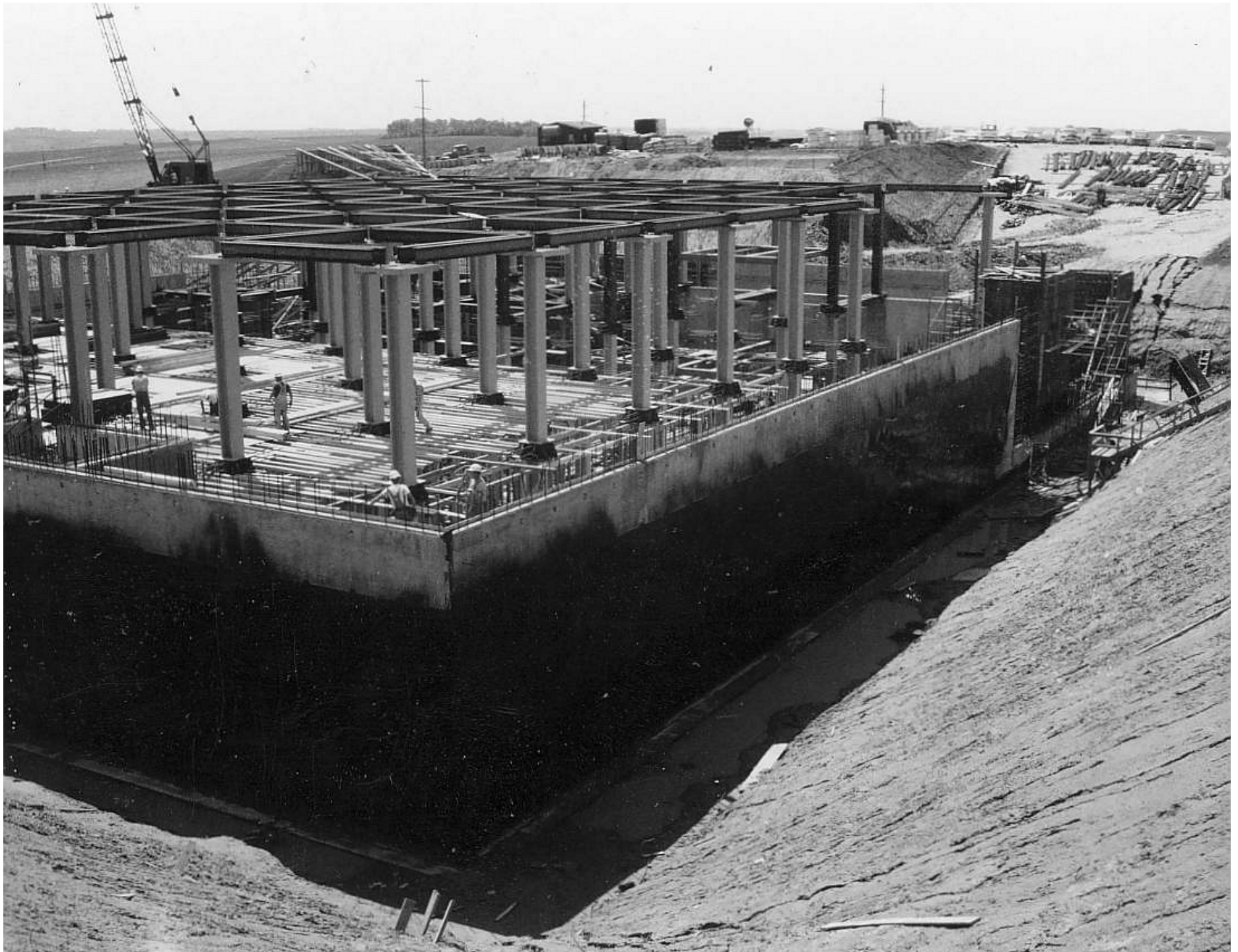


Lyons Communications Center | AUTOVON | 05-26-67 Partially formed lower wall



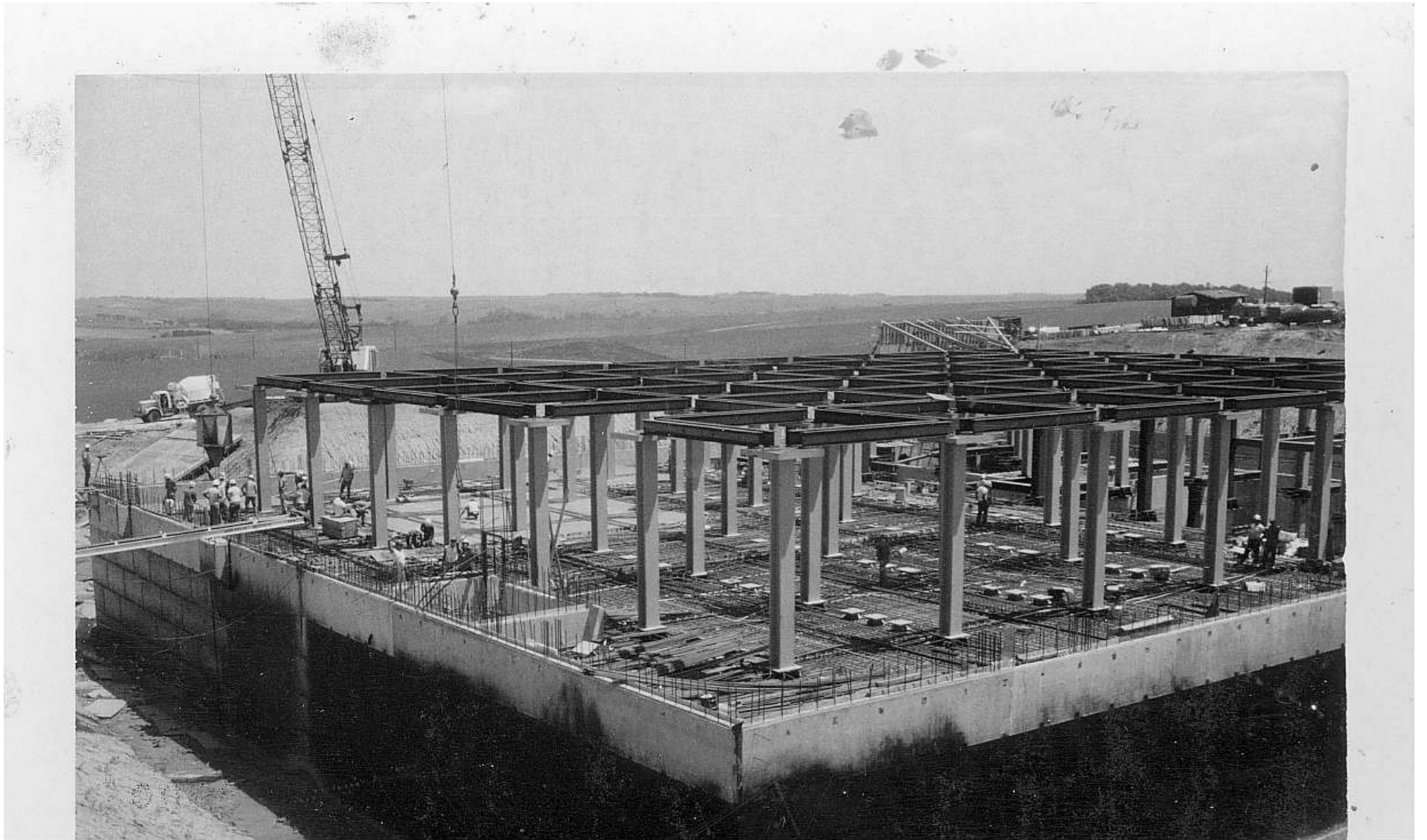
Lyons Communications Center | AUTOVON | 06-2-67 Stockpile decking material





Lyons Communications Center | AUTOVON | 06-8-67-b





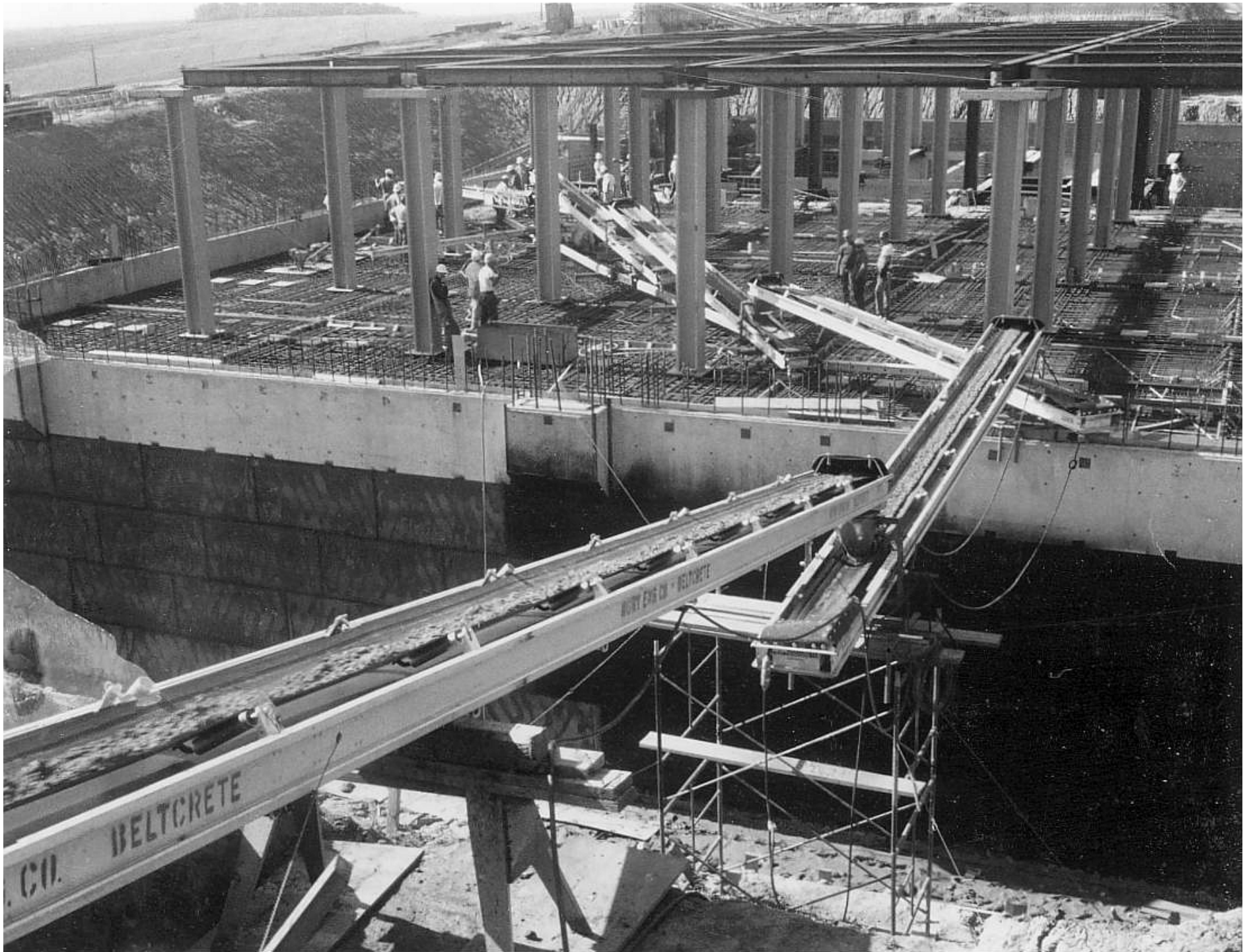
Lyons Communications Center | AUTOVON | 06-8-67-e





Lyons Communications Center | AUTOVON | 06-24-67 SW corner





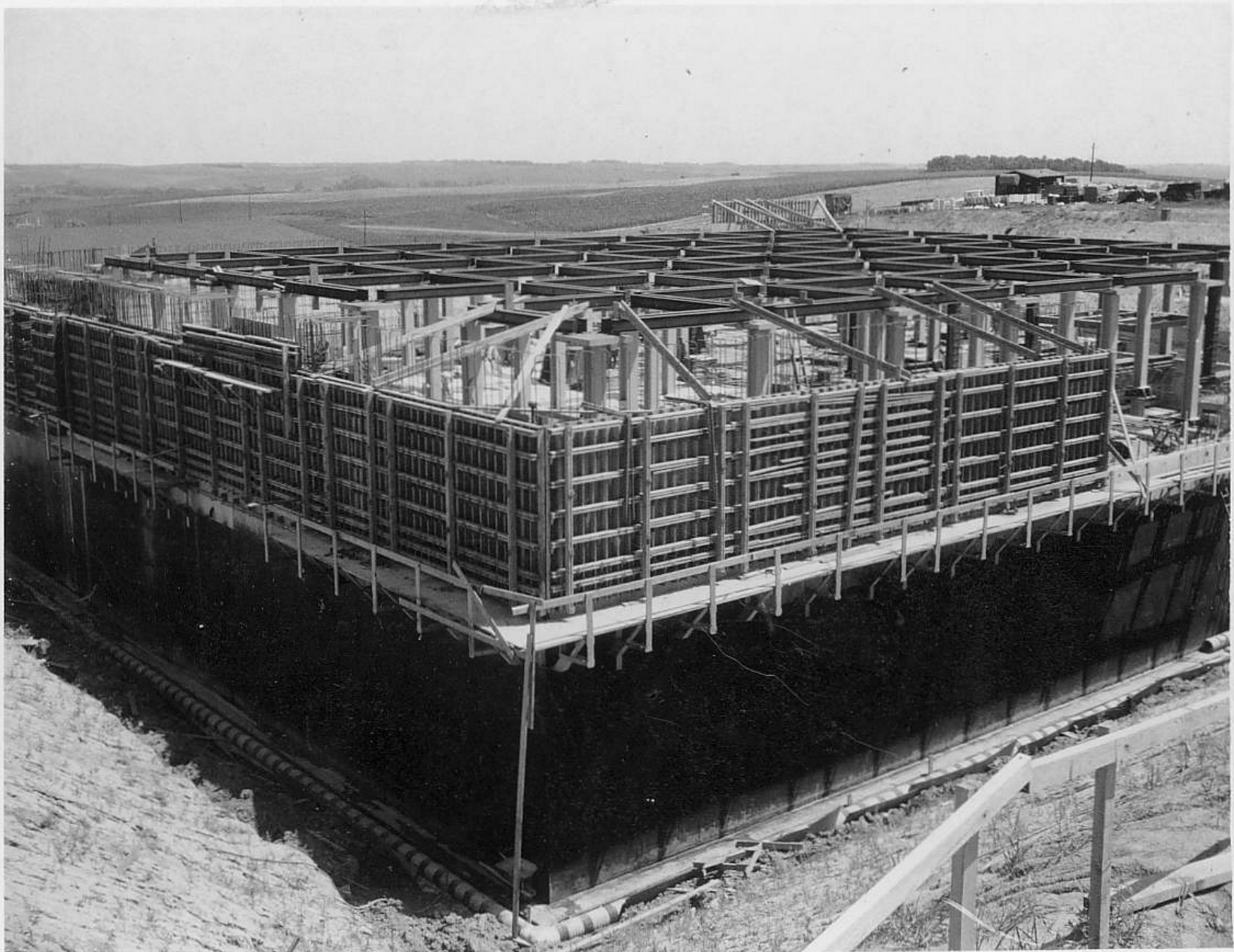
Lyons Communications Center | AUTOVON | 06-30-67 concrete conveyer





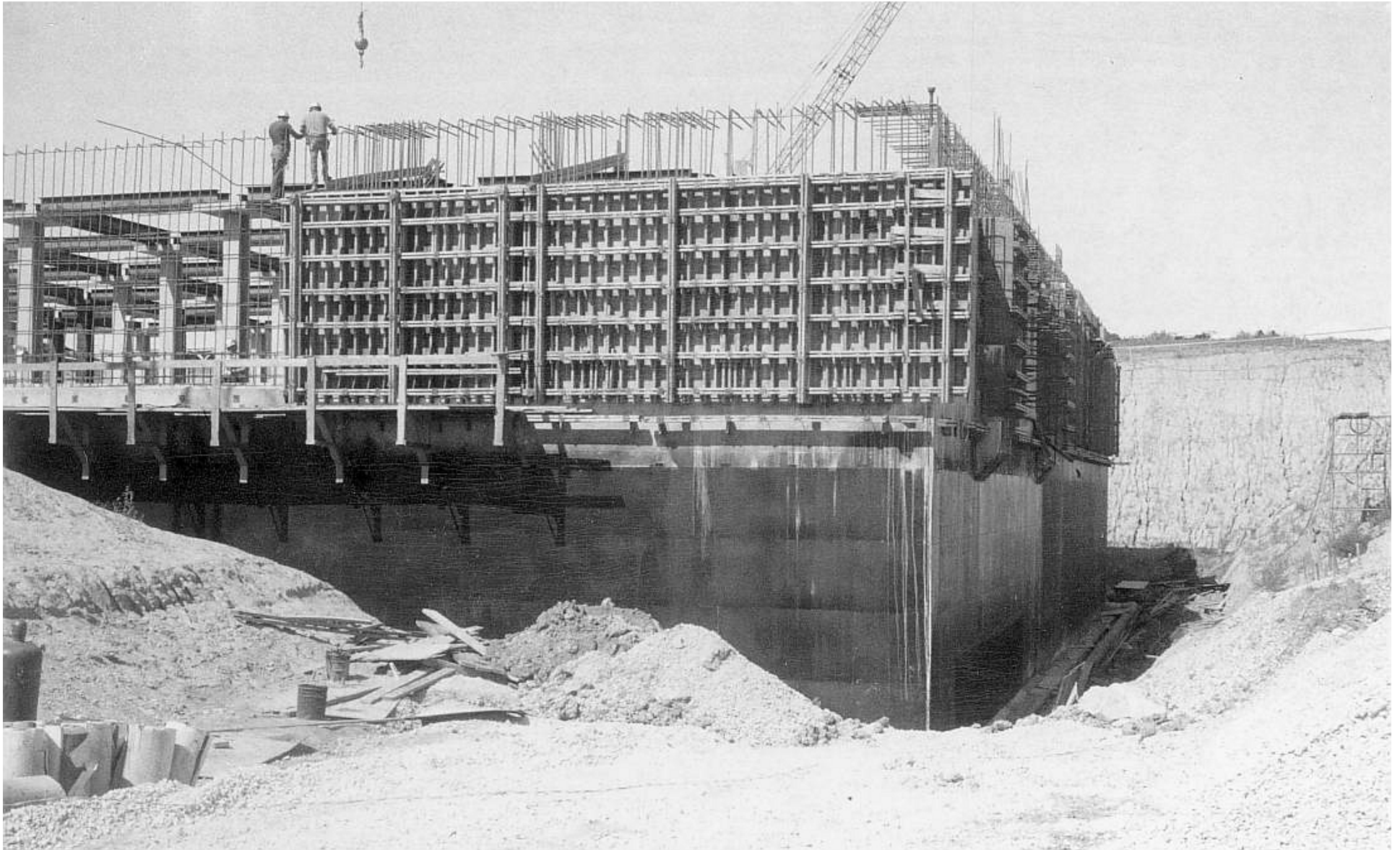
Lyons Communications Center | AUTOVON | 06-30-67 reinforcing steel column





Lyons Communications Center | AUTOVON | 07-28-67 NW corner upper level wall





Lyons Communications Center | AUTOVON | 08-3-67 NE corner





Lyons Communications Center | AUTOVON | 08-6-67 Placing conduit in area of AC-1





Lyons Communications Center | AUTOVON | 08-18-67 Drain piping \_ underfloor duct





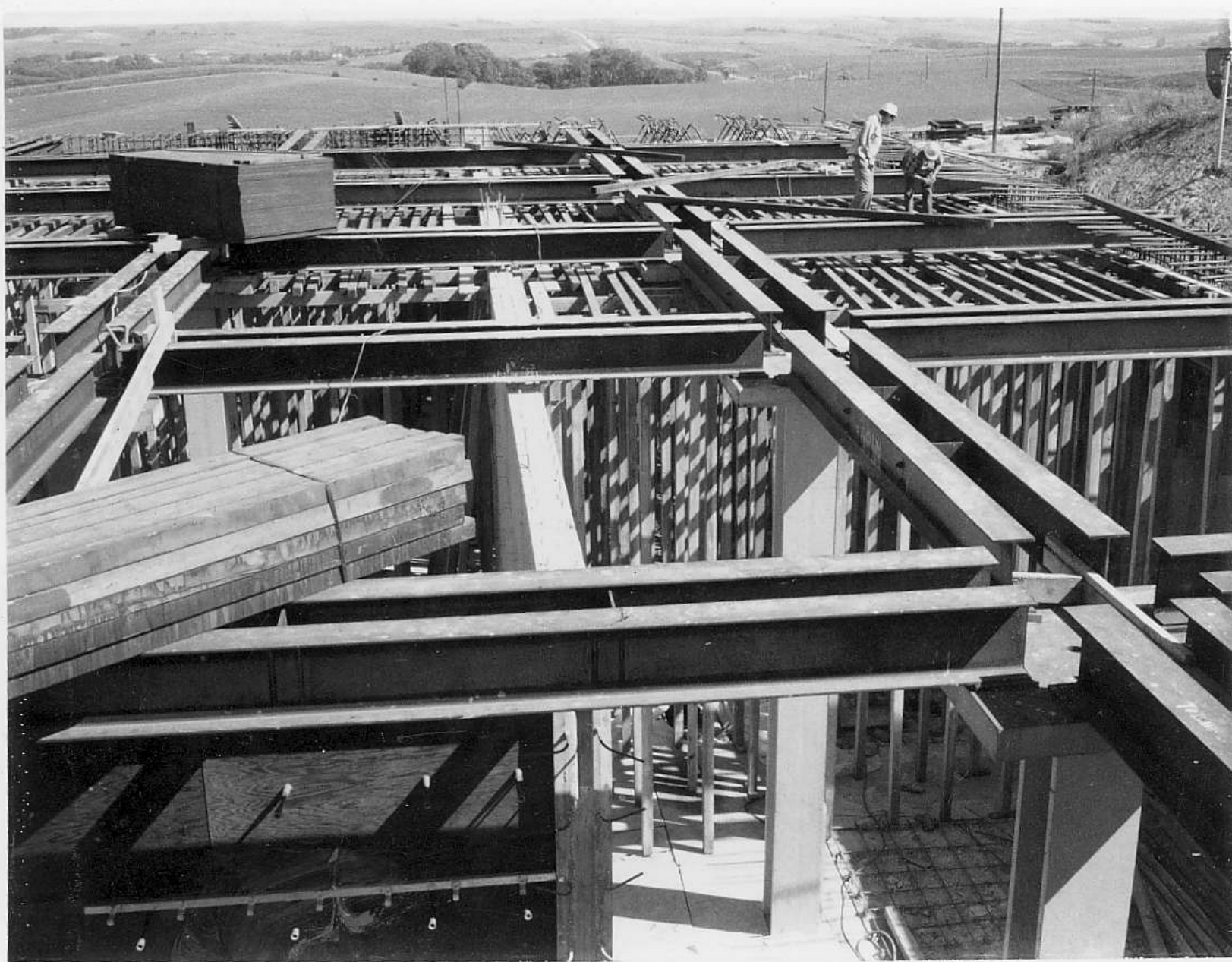
Lyons Communications Center | AUTOVON | 09-8-67 NE corner showing backfill





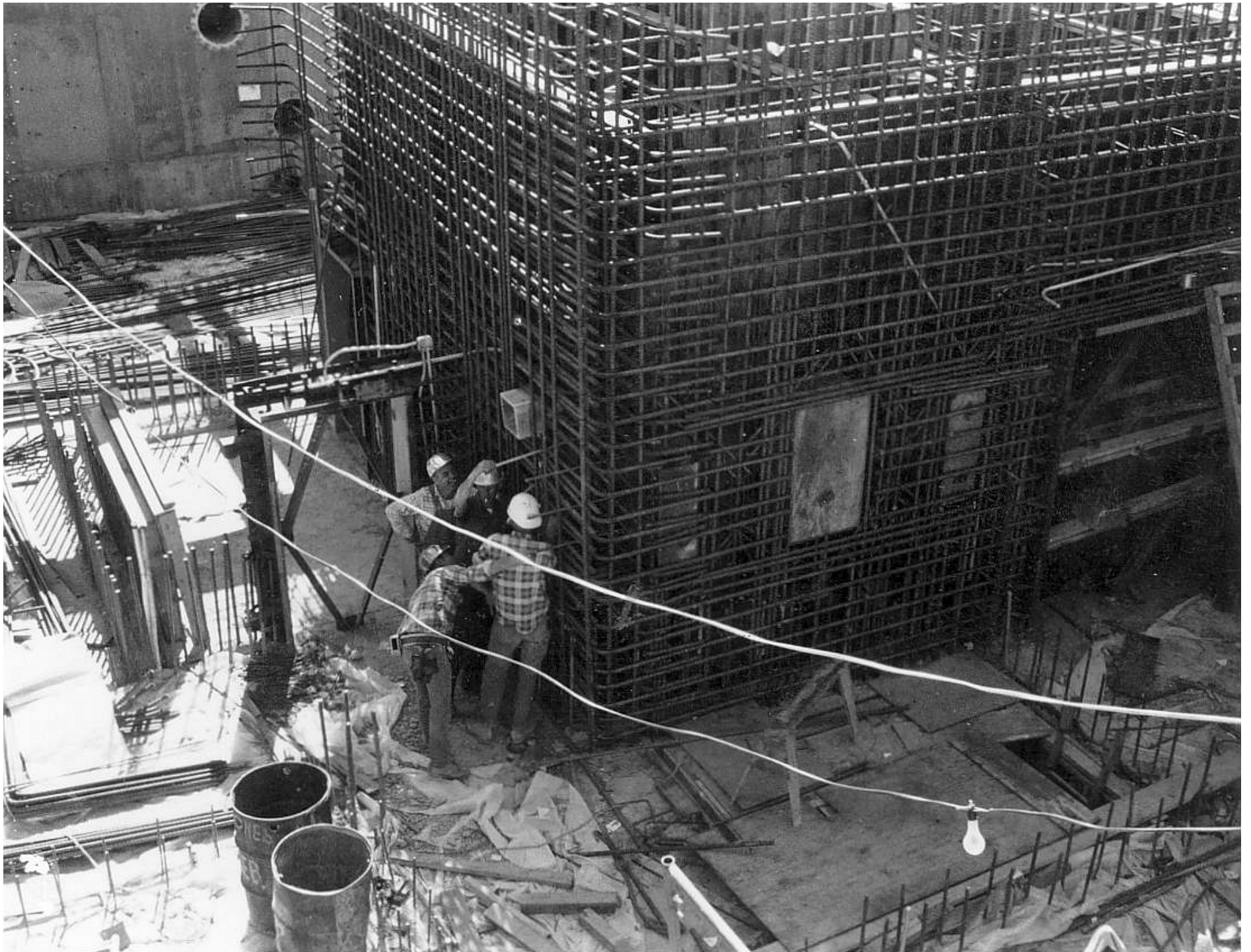
Lyons Communications Center | AUTOVON | 09-8-67 South, along West wall Backfill





Lyons Communications Center | AUTOVON | 09-22-67 shoring for roof





Lyons Communications Center | AUTOVON | 09-22-67 steel at stair 1 \_ equip shaft





Lyons Communications Center | AUTOVON | 10-4-67 View from NW corner looking east





Lyons Communications Center | AUTOVON | 11-10-67 Freshly placed concrete